YACHTING

Volume LV FEBRUARY + 1934 Number II

The magic of the West Indies — a compound of trade wind clouds, palms, blue sea, and coral sand. Inagua, in the Bahamas

Hunting for Treasure in the Bahamas

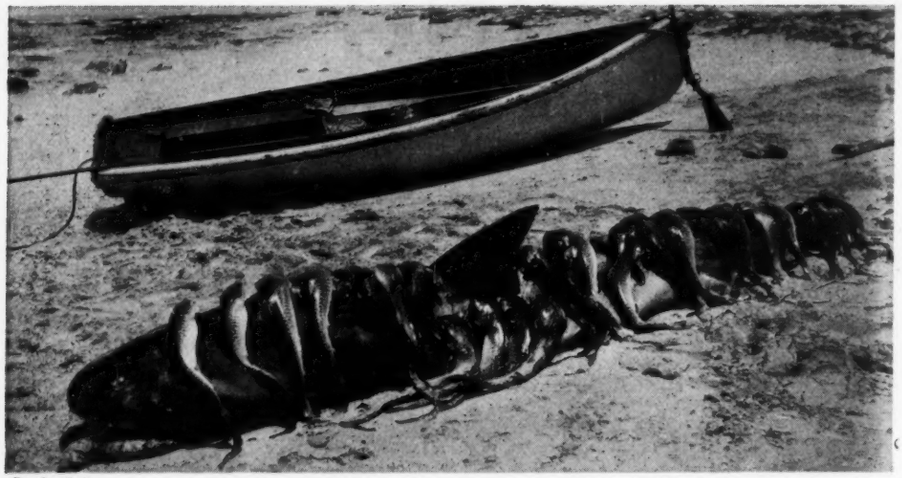
By A. HYATT VERRILL

F YOU wish to get a real "kick" out of yachting, take my advice and go on a treasure hunting cruise. There are plenty of authentic sunken treasure ships in West Indian waters and along the coast of the Spanish Main. Even if you do not succeed in salvaging bullion and jewels and pieces of eight from some ancient galleon sent to the bottom by hurricane or pirates' cannon, you will have a lot of fun seeking for the wrecks, you'll find a new interest in visiting almost unknown islands and out-of-the-way ports, and you'll have an incentive for the cruise, a definite object in view — even if it is a bit fantastic, romantic and something of a will-o'-the-wisp. But that is what makes treasure hunting such a fascinating adventure, for adventure it is, even when a treasure wreck is located and salvaging is conducted by practical and business-like methods.

But searching for sunken treasure is not such a harebrained visionary undertaking as many people believe. Many a good-sized fortune in gold and silver has been salvaged from the old hulks. Don't forget that stout old Captain Phipps lifted over two millions from a sunken galleon and was knighted and appointed Royal Governor of Massachusetts as a result. But best of all, from the yachtsman's viewpoint, the most alluring sunken treasures are in waters that are ideal for winter cruising. And if you happen to be a keen fisherman, as most yachtsmen are, you will find that the waters about the coral reefs that sent many a galleon to the bottom afford the best fishing grounds in the West Indies.

To fit out a vessel for a salvaging expedition and to fit out a yacht for a pleasure cruise, pure and simple, are two very different matters. Of course, if the treasure hunt is a side issue — just an excuse for a cruise, as one might say — it simplifies matters. But even so, add a diver's helmet and an air pump to your equipment. A professional diver is not really essential; anyone can go down five or six fathoms in a "hat" and a bathing suit, and to walk about on the sea floor among the fishes and the corals is an exciting matter. There is not the least danger in doing this. No trouble about life lines and skilled tenders. All you need is a man or two at the air pump; if at any time you wish to come up, all that is necessary is to slip off the metal helmet and bob to the surface like a cork.

Few people realize what an immense and varied equipment must be provided for a real salvaging expedition such as the one I undertook last year. First there was the ship to be secured. It is a simple matter to charter or buy a yacht of almost any type or size; but yachts are rarely adapted to practical salvage work. For our purpose we had to have a vessel with a draft of less than nine feet, she had to be large enough to carry eleven



Sands photo

The treasure hunting expedition saw many tropical wonders. Here is a nurse shark and her family

Salvaged from a Spanish galleon after three centuries beneath the sea. Anchor, gun crutch, swivel gun, hatch straps, and metal

men, with the necessary stores and equipment, the diving gear and divers' boats, and she had to be seaworthy enough to make an ocean voyage and to live through any ordinary storm or heavy weather. Finally, she had to be reasonably fast and economical to operate, in addition to being equipped with derrick booms and winches for handling several tons. The vessel finally selected was a converted sub-chaser powered with Diesel engines and capable of reeling off her twelve knots in a pinch, and plugging along at a steady ten to eleven even in a heavy head sea.

At last, all was ready. We slipped quietly from port one raw April day and headed southward for the Bahamas. There were plenty of thrills and adventures in store for us, aside from treasure seeking. Lord, how that sub-chaser could roll! Staunch, seaworthy, gallant little ship that she was, yet, as one of the divers expressed it, "she'd roll rails down in a drydock," for she drew but six feet of water and was as narrow as the proverbial plank on edge. A 15- or 20-degree roll was nothing to her; we soon came to regard a 30-degree roll as the usual thing, and in a heavy beam sea she'd go her 40 to 45, and bury first one rail and then the other with casual abandon. And if a man wishes to know what big, crested combers really look like, let him gaze up at them from a reeling deck barely four feet above the level of the sea. Even after weeks of experience, not one of us succeeded in developing sea legs that would accustom themselves to the rough and tumble acrobatic performances of our ship in a really bad sea. But it was not until we were at anchor in open water, close to the reefs, that she showed us what she really could do in the rolling line, and for weeks we led the life of lightship keepers.

Our original plan, after calling at Nassau for fuel and stores, had been to sail from Nassau by the regular ship channel, follow around outside of Hog Island, Salt Cay, Harbour Island and Eleuthera, and down Exuma Sound through the Crooked Island Passage to Great Inagua. But as local authorities and friends assured us that we could save at least half a day, and could avoid the heavy seas outside, by taking the inside passage which the regular mail packets use several times a week, and that we could secure the services of a competent pilot to take our vessel safely through the reef-filled, shallow waters of the sound, we decided to try it. I must confess that when the pilot appeared I did not feel much confidence in the fellow's ability. He was scarcely more than a boy, and he stuttered so badly that long before he could stammer an intelligible order we might be hard and fast aground.

Still, he was most highly recommended by the skipper of the mail packet, and he assured us, after several minutes' effort to articulate the words, that he could take us through, in the middle of the night if need be, without scratching the paint. It was all a matter of memory and knowledge of the reefs. Neither buoys nor lights marked the winding, devious leads — they do not deserve the name of channels — for the Bahaman sailor deems markings as a reflection on his skill and ability. During one of the meetings of the House of Assembly, at which I was present, a motion was made for the establishment of a beacon on one of the most dangerous reefs near Porgie Rocks. "What do we need a beacon for?" demanded a representative from one of the "out islands." "Do you mean to tell me our seamen have got to the point where they can't navigate any Bahaman waters without having traffic signals, like Bay Street?"

Putting our ship and our lives in the hands of the stuttering youth, we tooted a farewell blast to Nassau

and headed eastward. Possibly our advisers were right when they said we would save time by going inside, but they were sadly mistaken in regard to weather. Never have I seen a nastier sea than was running. Sharp and vicious, running against wind and currents, and driving between the countless reefs, the waves ran in every direction, hurling their crests straight upward, breaking white in open water as well as on submerged reefs, and making it impossible to distinguish the pale green marking coralheads from the deep ultramarine of clear water. For once our ship did not roll — for the simple reason that she never had time.

We were headed directly into the sun, and even with dark sun glasses we found it impossible to see reefs or shoals ahead. But not so our stuttering pilot. Standing just forward of the wheelhouse, he gazed unconcernedly into the dazzling sunlight with bare eyes. Scarcely speaking, for he realized his handicap in that direction, he would motion to port or starboard with his hand, and as the vessel was swung as directed we would slip past some jagged mass of coral or would pass between upjutting reefs with less than a fathom to spare. It was nerve-racking, exciting; we expected momentarily to feel the ship crash. But as hour after hour went by and nothing happened our fears gave way to wonder as to how any human being could see the reefs in that glare of sunlight and maelstrom of sea. To our eyes the light was blinding.

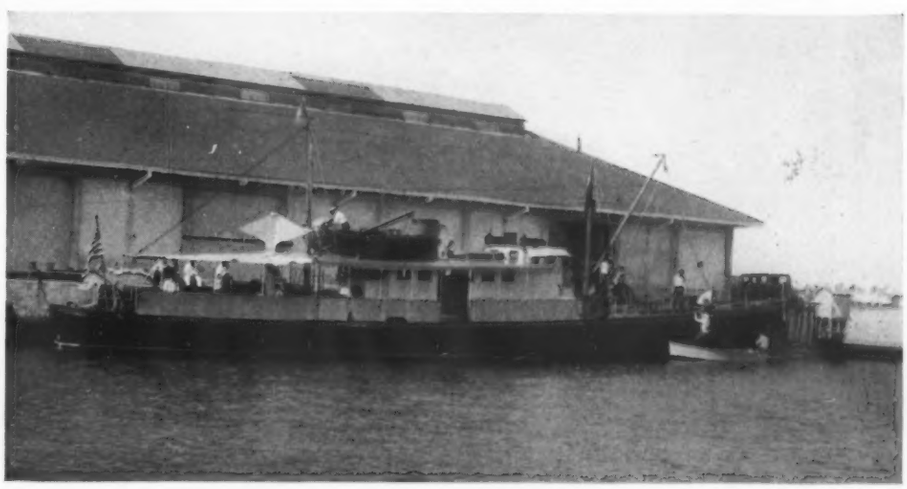
When, eventually, I asked the pilot about it he grinned. "I-I d-do-don't c-ca-can s-see 'em, sir," he replied. "I-I-I j-j-just kno-knows where th-they b-be, sir."

Perhaps it was just to prove what a skilled pilot he was, or perhaps he wished to give us a final thrill before leaving us off Long Island light. But whatever his reason, instead of taking us out by the regular channel through the barrier reef, he headed for a perfect nest of rocks and islets where, according to the chart, there was not enough water to float a good-sized rowboat. And while he made it, and appeared to take it as a matter of course, we all breathed a sigh of relief when we once more floated in deep water in the open sound.

The run to Inagua was uneventful. The wind was light, the sea smooth and we had great sport trolling for dolphin, barracuda and kingfish. Great Inagua was sighted at sundown, and it was black dark when we were off the island. According to charts and all other available sources of information, the anchorage off the town could be found by bearings on a light on the customs house. But as we drew in toward the harbor not a light showed, other than the twinkling lights of lamps in houses. With a man at the lead, we nosed in and dropped anchor in eight fathoms. Scarcely had the cable run out when a brilliant light flashed on shore. For a moment it glowed steadily and then commenced winking in a series of dots and dashes. But if it was Morse, no one on board could make head or tail of it, and with the skipper cursing the islanders for not having the custom house light going, we turned to our delayed dinner. Presently there was the splash of oars and a rowboat bumped alongside, its occupants two black negroes who blandly asked why we had anchored a mile or more from shore instead of coming close in. When informed by the captain, in far from polite language, that the custom house light — or, rather, its absence — was responsible, they seemed greatly surprised.

"Beggin' yo' pahdon, sir, but she ben't set there for never so long. But Mr. Simonette did come adown wif he car, sir, an' signal fo' to direc' you to the anchorage, sir."

From the sea, Inagua is a delight-



A diver goes down to the galleon. The reef which was the scene of these operations is almost one hundred miles from the nearest land

Moored at Nassau, where fuel and stores were taken aboard. This converted sub-chaser was capable of twelve knots with her Diesel engines

fully attractive island, but in this case distance lends more than enchantment. Once a highly prosperous island with great plantations, lordly mansions and country homes, and a populous port, it has gone steadily downhill. Scarcely a vestige of its former greatness remains, and Matthewtown is little more than a collection of huts. But everywhere are the ruined walls, the crumbling remains of imposing buildings, now abandoned, and overgrown with thorny vines and cactus. For miles outside of the town the roads are bordered by forsaken gardens, fields and plantations, enclosed by endless stone walls, rapidly being overwhelmed by the wild guava trees, the agaves, and the cacti. And as if the abolition of slavery, the era of beet sugar, the discovery of synthetic indigo, and the development of other tropical industries in more accessible spots had not been enough, poor Inagua has been buffeted by hurricanes and swept by tidal waves.

From Inagua we set our course for the reefs where we hoped to locate our sunken treasure ship, and the real adventures began when we at last dropped anchor among them. Imagine, if you can, hundreds of coral heads, some showing as pale green patches several fathoms beneath the sapphire blue sea, others but a few inches beneath the surface, still others awash. Try to visualize the latter, with the long ocean swells "boiling" over them in masses of upflung foaming surf, the next moment bare and exposed — masses of jagged, cruel coral fangs reaching out myriads of clutching fingers as if to seize the boat and drag it to destruction as the undertow sucked it towards them. So sinister, so cruel, so seemingly possessed of some diabolical purpose did these coral heads appear that even the most unimaginative and sea-hardened mariners of our company admitted to a feeling of horror and dread when working about the reefs. Every instant we were forced to be on the alert. Once our skiff, which was used to explore for the wrecks, struck those jagged, serried masses of coral, we were lost. But, as always, familiarity breeds contempt, and before long we were paddling about amid the reefs, or even mooring to them, and landing upon them at times, without giving them more than a passing thought. Very beautiful they were, too. I have explored many a barrier reef, I have spent months collecting marine specimens on coral banks and reefs in the West Indies and elsewhere, but never have I seen anything to equal the beauty of form and color that we found on these upjutting reefs, nearly one hundred miles from the nearest land, rising sheer from the bed of the ocean. Looking downward through the glass-clear water, they appeared like mountain peaks whose bases vanished in abysmal blue depths. Waving sea-plumes, sea-rods, and sea-feathers swayed in the currents. Purple and golden-yellow sea-fans many yards across were everywhere. Here and there loomed the openings of deep caverns or grottoes mysteriously night-blue, the luminous eyes of invisible creatures glowing in their dark recesses. Giant sea-anemones — magenta, sky-blue, emerald and scarlet — formed patches like gorgeous flowers between the corals. And everywhere, like bright-plumaged birds in a real forest, the brilliant-hued tropical fish flitted lazily back and forth or nibbled at the coral twigs. Now and then a great, ugly, shadowy shark would swim slowly into view, to cock a cold, calculating eye upward, grin maliciously, and vanish like a wraith amid the tangle of corals; or, again, a vicious, wolf-fanged barracuda would flash like a meteor across the scene, and, seizing an unwary fish in its steel-trap jaws, would dash away like a pirate craft after a foray.

But our search lay between the reefs and not upon them. Very different from the reefs themselves were these valley-like expanses of the ocean floor. Here was no coral forest, no great, wide-spreading palmate madrepores. Great masses of tangled stag-horn coral lay scattered about like piles of leafless brush. Here and

(*Continued on page 128*)

Williamson photo

The beauty of form and color which rewards those who walk the ocean floor is indescribable

Beken & Son, Cowes

A fleet of the International Twelve-Metre Class racing off the Isle of Wight in the 1933 Cowes Regatta. One or two of these boats may be brought to this country next summer if an international race in this class materializes

A Real International Class

By

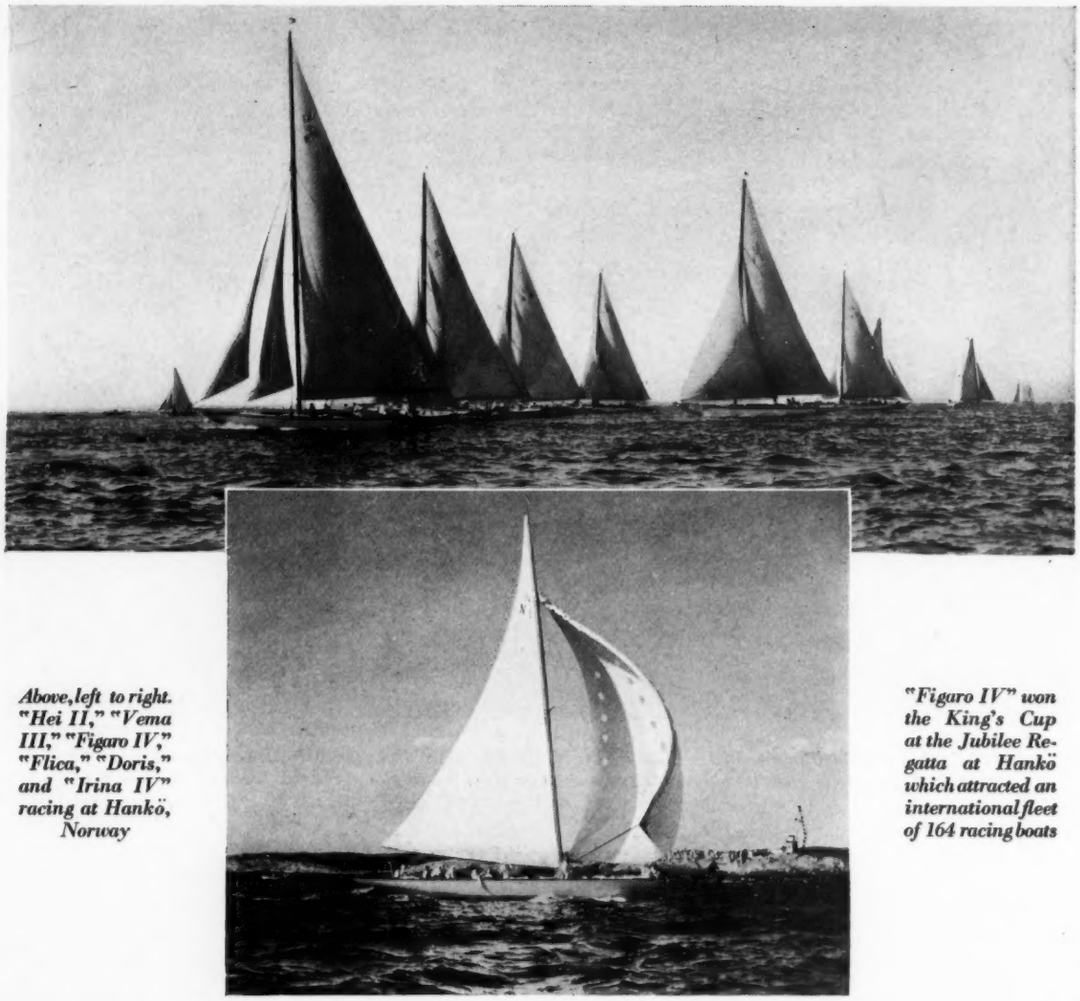
CARL KONOW

AS AN international race in the Twelve-Metre Class in our waters during the coming season seems highly probable, I feel quite certain that yachtsmen on this side of the Atlantic will be interested in the racing in this class in European waters.

During the season of 1933 I had the good fortune of racing in an English "Twelve," and as the competition in this wonderful class this year was of real international character a description of it should be of special interest to the readers of YACHTING. The yacht in which I crewed, Mr. C. R. Fairey's *Flica*, raced in five different countries against competitors flying four different ensigns. Although *Flica*, built in 1929, was racing in her fifth season, she was by far the most successful of her class throughout the past year. It was with considerable anxiety that her owner started the racing season, as two new "Twelves" had been built during the winter, and in fitting out *Flica* very little was left undone in the way of improving rig and gear. The changes all worked out to be real improvements, however, and had much to do with her success. The main reason for her success, however, was undoubtedly the skilful handling she received from her owner. He was unusually good at starting and he had a rare gift of always choosing the right sails, whether on the wind or sailing free. Sailing *Flica* for the fifth year, he knew her perfectly and the fact that he had the same smart crew forward as in the previous season was an additional advantage. Furthermore, in most of the important races, he carried the same afterguard as in 1932, when *Flica* was the English champion of her class.

Flica started her season at the end of May at Harwich where she sailed two races, and before going on the foreign campaign she started in five more races at Southend and Ramsgate. In these seven races she took four first and two second prizes in a class of five boats. Then followed a period of preparation for the coming races and for the passages to the Clyde, where *Veronica* and *Iyruna* were to meet the new Fife boat *Zelita*, and to Norway, where *Flica* and *Morwenna* were to take part in the 50-year Jubilee Regatta of the Royal Norwegian Yacht Club, which was to start on July 3rd. *Morwenna* left Dover on June 11th in tow of the American schooner *Vema*, which was under charter to Mr. G. Unger Vetlesen of the Royal Norwegian Yacht Club. Mr. Vetlesen is the owner of the other 1933 Twelve-Metre, *Vema III*, designed by Anker. *Vema* also towed the French *Doris*, owned by M. Louis Bréguet.

In tow of her owner's motor yacht *Evadne*, *Flica* left Dover June 24th and made the passage by way of the Kiel Canal. The second day in the North Sea it became too rough for towing and the line was cast off. *Flica* proceeded under storm trysail and jib and was again picked up by her mother ship off the mouth of the River Elbe. The rest of the trip was uneventful and we arrived at Hankö, in the southern part of Oslo Fjord, early on June 29th. In the evening we towed the *Flica* up through beautiful Oslo Fjord and anchored off the Royal Nor-



Above, left to right. "Hei II," "Vema III," "Figaro IV," "Flica," "Doris," and "Irina IV" racing at Hankö, Norway

"Figaro IV" won the King's Cup at the Jubilee Regatta at Hankö which attracted an international fleet of 164 racing boats

wegian Yacht Club's very modern looking clubhouse. Among the many yachts anchored there we saw the American *Dorade*, looking as trim as ever after her passage across from New York.

The next two days were spent in tuning up, the *Flica* and the *Doris* racing against each other on the lovely Bundefjord, an arm of Oslo Fjord. The wind was light to moderate and the weather could not have been better. These conditions held throughout the week's racing except during the long distance event from Oslo to Hankö, which was finished in quite a smart breeze.

As the racing started on July 3rd with this long distance race, in which almost one hundred yachts in fifteen classes were entered, the boats kept coming in to the anchorage all during the week-end, and there is no doubt that the racing fleet assembled there on Sunday evening was the most representative ever seen at an international regatta. However, as there were 164 class yachts entered for the five days of racing at Hankö, the fleet at the latter port greatly surpassed that anchored at Oslo.

The distance race started from the club anchorage with the finish line at Hankö, the distance being 47 nautical miles. Because of the length of the run it was arranged that the classes should be sent off in inverse order to size, that is, the smallest class first and the biggest class, the Twelve-Metres, last.

It was very interesting for us in the "Twelves" to have a chance to watch the smaller yachts start, and they were certainly worth watching, especially those in the International Six- and Eight-Metre classes and the old Twelve-Metre Class, which is composed of yachts designed to the old International Rule, which expired during the war. Although some of these were built as far back as 1909, and despite the fact that some carried the original gaff rig, the racing in the class was of the keenest.

We were six in our start, and for the first time we were matched against our much feared debutante, *Vema III*. The start was a close reach. We were all over the line in about 20 seconds, *Vema III* and *Flica* side by side, the latter to leeward but with her wind free, and *Doris*, with a few feet of overlap, to windward of *Vema III*. We drew ahead quite soon and later increased our lead, benefiting by a short luffing match between *Vema III* and *Doris*. *Figaro IV*, an Anker boat of 1924, but rerigged this year, was causing us more anxiety than the others as she was hanging on very well down to leeward. However, we were going very nicely when we saw all the smaller yachts ahead gradually running into a flat calm. We soon overtook most of them, and with our greater weight carried our way farther into the calm spot than the smaller classes, but we were finally stopped dead by the wake of a passing steamer. *Vema III* carried still farther and passed us with good way on, as did *Figaro IV*, while *Doris* drew up level. After being becalmed for about half an hour the wind started coming from all the points of the compass, and I think that we

must have set our spinnaker and taken it in at least twenty times during the next two hours before the wind came in steady, and increasing, from N.W.

We had gradually worked up level and passed the two Norwegians, and when the breeze finally came in we had a safe lead, the rest of the course being dead before the wind. We managed to pass all the small yachts but two of the 32-Square-Metre Class, which finished two minutes ahead of us. We finished 2 minutes 5 seconds ahead of *Vema III*, which, in turn, beat *Figaro IV* by less than half a minute. Most of the races were very close, especially those of the International Rule classes.

It had been a long race and we were all very thankful that Tuesday was an "off" day. In the afternoon we went out for a look at the starting lines (there were three different ones) and noted the location of some of the marks. We all admired the beautiful sailing grounds and marveled at the number of yachts assembled for the regatta. Later, we learned that there were 330 sailing yachts, 20 auxiliaries, 67 large motor yachts, and 133 smaller motor yachts, figures which are significant of the interest shown in yachting in Norway. Ten different nations took part in the regatta and I regretted the fact that no American-built yachts had been entered. The various classes were well filled, especially the international classes, which were represented by seven "Twelves," nine old "Twelves," two "Tens," seven "Eights" and twenty-nine "Sixes." The races were excellently arranged and the courses were particularly suitable for an international event, as local knowledge gave very little advantage.

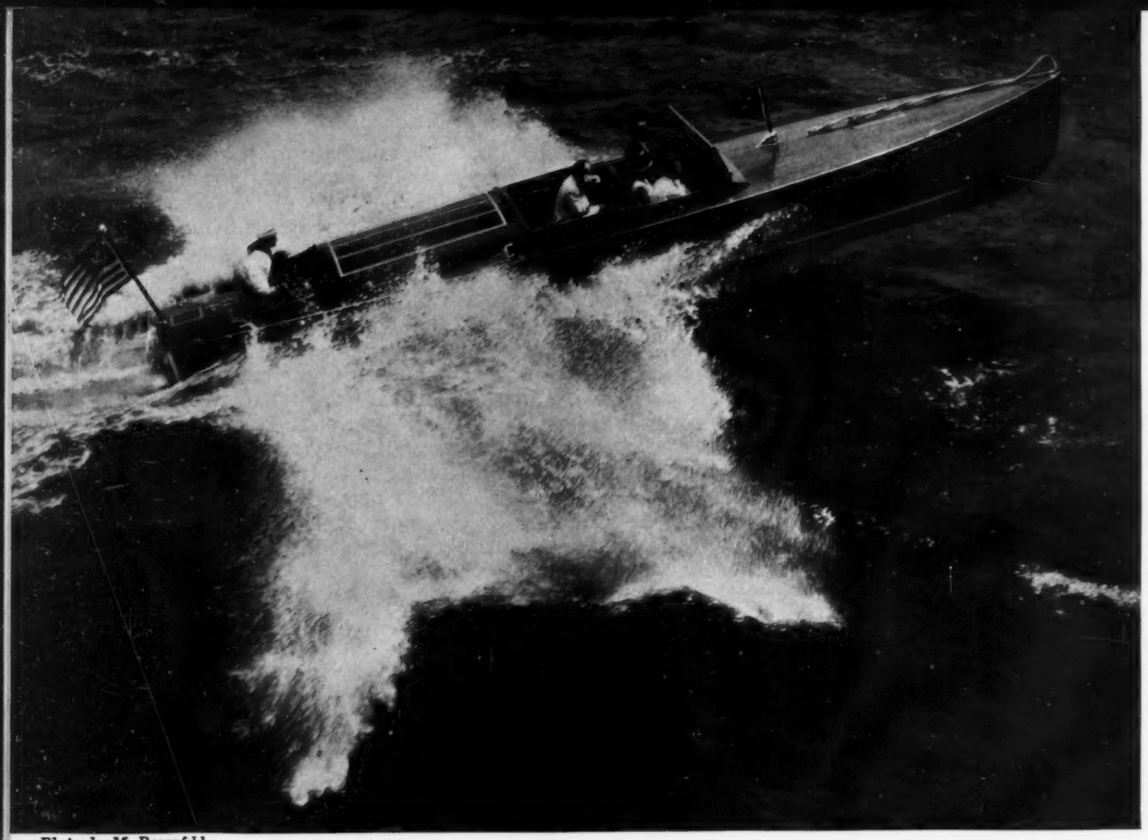
When we got out to the starting line at noon on Wednesday, July 5th, the wind was W.S.W. and the strength about 8 knots to start with, later on increasing to about 14 knots. A marvelous summer day, and what a sight the racing yachts and the numerous spectator craft made! The starting signals were given from a small island crowded with people, all eager and interested in the yachts and their starts. The course was triangular, 27.1 miles, with a beat to windward of about 11 miles, then an 8-mile run to and around the gas buoy at Hollenderbaen, a jibe, and a 5-mile run to the finishing line. *Vema III* was first across, but *Figaro IV* and *Flica* were to weather of her. At the start *Vema III* drew away from both of us, pointing higher and footing faster, and at one time she must have been as much as a couple of minutes ahead of us. However, when the breeze increased towards the end of the windward leg we closed up on her. Still, *Vema* would have rounded the mark first if her Genoa jib sheet had not carried away. She first tried to reeve the weather sheet, but the current, in the meantime, had carried her so far to leeward that she had to tack. We had just room enough to bear off under her stern, luff a bit and bear away around the mark with not more than inches to spare. On the long run in the freshening breeze *Vema III* caught up a lot,

(*Continued on page 116*)

Photos by Beken & Son

"Flica," owned by C. R. Fairey, racing in her fifth season, was the outstanding winner during the past season abroad. It is hoped that she may come to American waters next summer

"Vema III," a new Anker-designed Twelve-Metre, is owned and was raced throughout the season in British and European waters by G. Unger Vetlesen, of New York

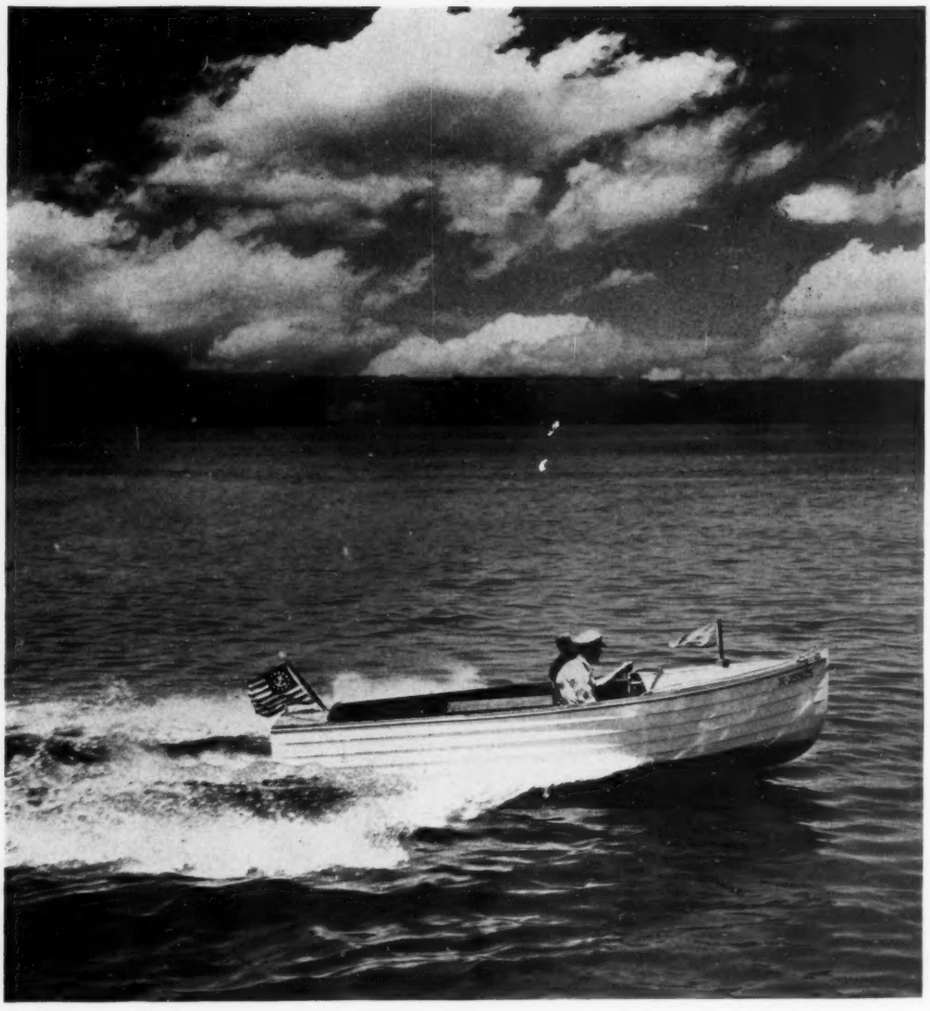


Right. A handsome 30-footer by Hacker. Speed, 40 m.p.h. Sterling-powered

Photos by M. Rosenfeld

A high-powered runabout by Gar Wood. Speed, 42 m.p.h. Scripps-powered

A small utility runabout by Dodge. Speed, 25 m.p.h. Lycoming-powered

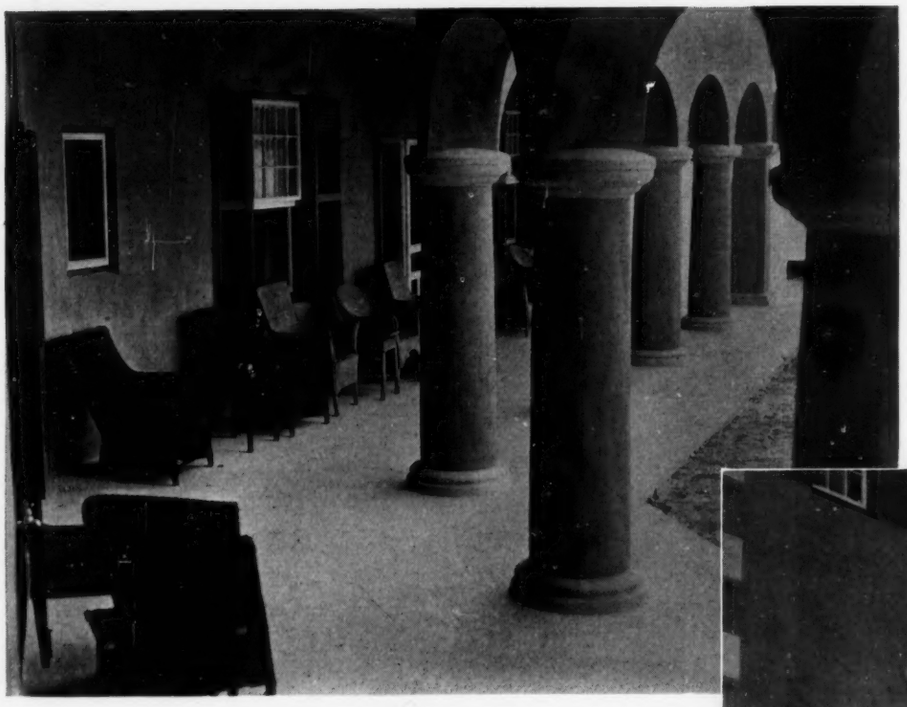


The Lodge Torpedo.
Speed, 44 m.p.h.
Lodge-powered

A fast Chris-Craft.
Speed, 38 m.p.h.
Chrysler-powered

Speed

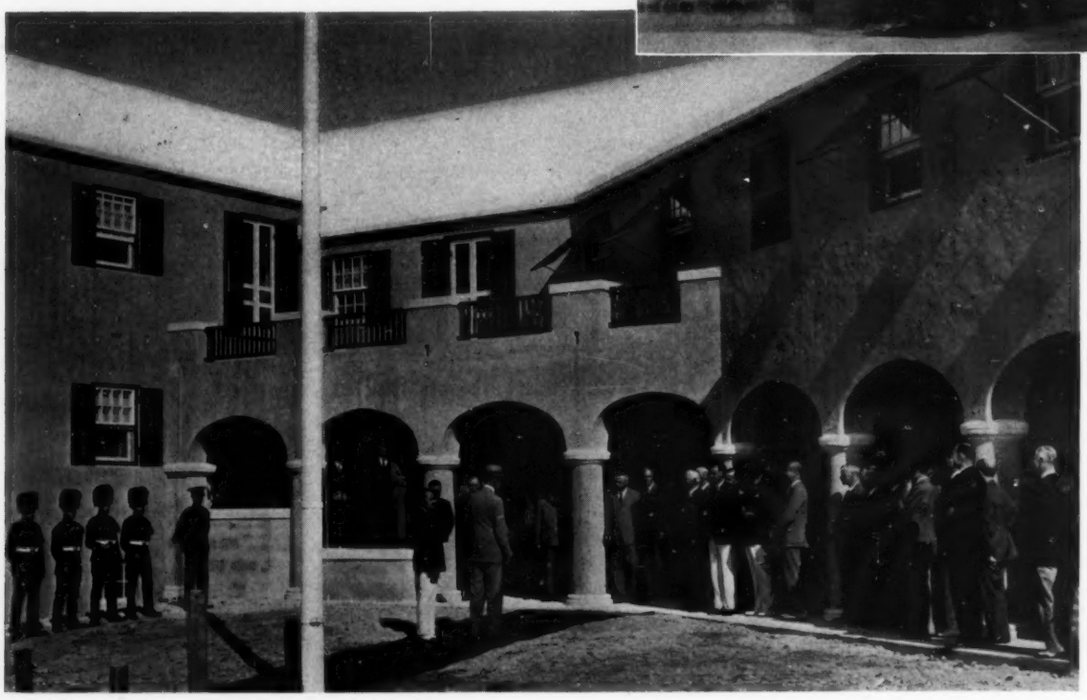
The Stock Runabout Affords the Intoxicating Thrill of Traveling at High Speed Over the Water



Distinctly Bermudian in its architecture, the new clubhouse fits its setting perfectly. At the left is the covered verandah, facing beautiful Hamilton Harbor

The Attractive New Home of the Royal Bermuda Yacht Club

At the right is shown the main entrance, from the land, and below is the court of the new clubhouse on the day the flag was broken out for the first time by His Excellency the Governor, Lieut. General Sir Thomas Cubitt



The spacious lounge of the Royal Bermuda Yacht Club's new home. Simplicity of design and furnishing is the keynote

Bermuda Yachtsmen Move Into New Home

By HERBERT L. STONE

THERE is no place on the Atlantic coast of North America that appeals as much to those Americans who sail yachts as Bermuda, and no group of yachtsmen with whom they feel a greater bond of friendship than the members of the Royal Bermuda Yacht Club. Therefore, the opening of the new clubhouse of this ninety-year old organization is as great an occasion to those who do their yachting in the United States as it is to the members of the Royal Bermuda themselves.

For something over fifty years the club has occupied quarters in Hamilton on the upper floors of an old building on Front Street, facing the harbor. The setting was distinctly colonial, the atmosphere unmistakably British, and it was here that American yachtsmen of several generations became acquainted with Bermudian hospitality. It was, therefore, with just a tinge of regret that we who had known and raced with or against the Bermuda sailors heard that the old quarters were to be abandoned for a new and modern clubhouse directly on the water. But the opening of the new home late in December obliterated any doubts that the atmosphere of the old quarters would be lost. The spirit and the tradition which we all loved is just as much in evidence in the new quarters, which are much more suitable and convenient for the purposes for which the Club was organized.

Located on Albuoys Point, which juts out into Hamilton Harbor, almost opposite the Hotel Bermudiana, the new clubhouse is of the distinctive Bermudian architecture. It faces the west — if facing means the outlook that it affords down Hamilton Harbor towards Gibbs Hill — and while the entrance is on the opposite side, facing a new park now under construction, we believe the "front" will be considered by all those using the Club as the side *opposite* the front door. On entering this door one finds himself in a circular foyer with a zenitherm floor laid out in the pattern of a compass rose with all the points thereon. To the left is a spacious lounge, while to the right is the entrance to the bar, a most attractive room, done entirely in native Bermuda cedar. A gallery leads around the bar to the billiard room and the dining room, the latter facing the harbor, with large windows on three sides.

Upstairs will be found a library and reading room, two card rooms and the secretary's office, and nine bedrooms opening from either side off a wide central hall. On the lower floor is also a covered veranda facing a grass court which slopes down to the concrete bulkhead forming the club dock. A more ideal and complete yachtsman's home would be hard to find.

The year 1844 seems to have been a memorable one in the annals of yachting. It was in July of this year that a group of yachtsmen gathered on Commodore John C. Stevens' yacht *Gimcrack*, anchored off the Battery, and formed the New York Yacht Club, oldest American

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T. O. M. Sopwith

Owner and Skipper of the "Endeavour," Challenger for the America's Cup

By ARTHUR LAMSLEY

THOMAS O. M. SOPWITH, the English Corinthian helmsman who has challenged for the America's Cup with the *Endeavour*, has established a reputation both in aviation and in yacht racing. He has created a flourishing business manufacturing aeroplanes; racing yachts has become his hobby. Trained as scientist and engineer, his knowledge of aerodynamics gives him an unusual understanding of how to set and obtain the most out of sails.

Seven years ago he was comparatively unknown in English yacht racing. He began his yachting career in the Twelve-Metre *Doris*. After gaining a season's experience, he commissioned Charles E. Nicholson to design and build the "Twelve" *Mouette* for him in 1929. In his very first season of racing Sopwith became the leading helmsman of the class, and repeated this achievement in the two years following. Three seasons of racing brought him 109 prizes, of which 75 were firsts, a phenomenal record for a newcomer.

In 1932 he sold *Mouette* to an American yachtsman, and bought from the late Sir Thomas Lipton's trustees the ex-challenger for the America's Cup, *Shamrock V*, and raced her throughout the season. He won a fair number of prizes, sharing the honors with His Majesty's *Britannia* for first place in the list of prize winners, a remarkable success for a helmsman during the first season in a Class J yacht, especially as he had had no previous experience with big craft. Furthermore, it seemed to those of us watching *Shamrock* that her new owner did not race her over-hard on some occasions; the suggestion gained a hearing that he was merely experimenting with the ex-challenger, a fact brought out more obviously during the summer of 1933.

In preparation for her season's racing, *Shamrock V* underwent alterations both structural (underwater) and in sail plan. These modifications were not wholly successful, but Mr. Sopwith persisted in his experiments. He made a thorough study of *Shamrock V* and kept a keen and observing eye on the new *Velsheda*. This new steel yacht, owned by William L. Stephenson, and designed by Charles E. Nicholson to the amended Class J rule, was the outstanding success of the season. During the whole of the season Mr. Sopwith steered the ex-challenger like a master, but she had not the speed of the new Nicholson creation. I think it is freely admitted that Sopwith displayed the finest helmsmanship seen in the big class during the season.

(*Continued on page 118*)

"Fish" America First

The Most Demanding of Fishermen Will Find Big Game in Nearby Waters

By

H. W. MAJOR

A 502-pound specimen. Docking the prize marlin

DISTANCE, according to the old adage, lends enchantment to most people; but to the fisherman distance apparently works further magic — it seems to make the fish larger and more plentiful. Let us cite the striped marlin fisherman as our first example. Here, in this country, in the blue waters of Catalina, there are so many of this species of marlin that at times the docks are completely cluttered with them. I do not mean to imply that everybody gets them; after all, it takes a fisherman to get the best of one of these speed demons. But it is safe to say that most of those who try to hook a striped marlin at least have a chance to lose one. They are so plentiful that many of the old-timers disdain to use 24-thread line on their reels, but match their skill against the power and speed of the fish with 9-thread, and some have boated marlin with 6-thread line which has a breaking strain of only sixteen pounds. During the season of 1931, nearly eight hundred striped marlin were recorded at Catalina. And yet, fishermen frequently go to New Zealand in pursuit of these fish.

The history of fishing for broadbill offers another case in point, although in this instance the fisherman did not choose the wrong continent. Mr. W. C. Boschen was the first man to conquer a swordfish with rod and reel. He took his fish in Southern California waters and soon fishermen from all parts of this and other countries bought long tickets, and proceeded to enjoy what were considered the only swordfish waters of the world. The odd part of it was that Mr. Boschen, who was a New Yorker, left more swordfish behind him in his home waters of Long Island than there were in Southern California, or in any other district.

Thirteen years after Mr. Boschen started the fishermen going west, Mr. Oliver Grinnell, also of New York, startled the fishing world by taking a swordfish a few miles from his summer home on Long Island. Nor was this fish a stray, as he followed his catch with several others. Now, more swordfish are brought in to Montauk, Long Island, than to all other districts combined.

At this time we know little of the possibilities of the Bahamas as a fishing ground, although these islands are, in places, only forty-five miles off the coast of Florida. It would, therefore, seem natural to suppose that this group of islands would harbor fish of the same types as those which have furnished many thousands of sportsmen with their winter fishing over a long period. Although both localities furnish tropical fishing, there is difference enough in the fish to make the tackle used in Florida quite inadequate when one has crossed the Gulf Stream to this cluster of islands which forms the western edge of the Great Bahama Bank. There is a great deal to be learned concerning the effect of ocean currents on all kinds of salt water fish, and the Gulf Stream creates problems that are difficult, if not impossible to understand.

For years fishing boats from our mainland have made occasional short trips across the Gulf Stream to Bimini and Cat Cay, little realizing that these forty-odd miles took them into fishing waters that were unlike any others they had known. The fisherman did not have a chance to hang on to a fish long enough to get a good look at what was breaking his line. Bad luck or poor lines were credited with the lack of results.

Two years ago, Mr. Louis R. Wasey, of New York, took a fancy to the little island of Cat Cay, and proceeded to make it his winter playground. It is a question whether Mr. Wasey is strictly a fisherman, or whether it would be more correct to describe him as one who likes the water — and the outdoors. With so much water around him, it is not hard to see why he engaged a fishing boat and an excellent guide in the attempt to clear up some of the mysteries connected with the east side of the stream.

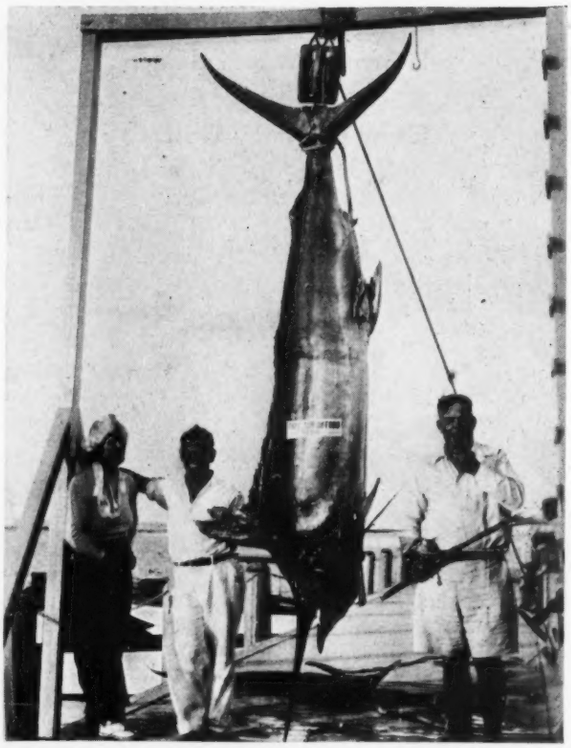
Things began to happen. Wahoo, it was found, were at least half again as large as those found on the Florida

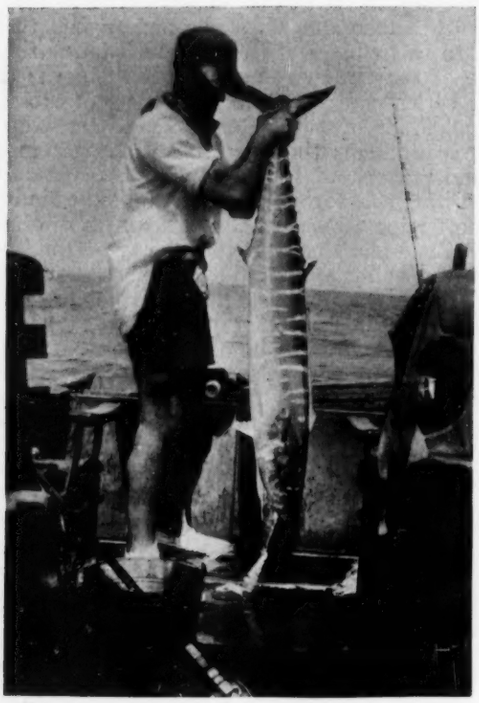
shore. White marlin were larger and more plentiful, and as many as four were taken in one day, all weighing between seventy and ninety pounds. Although the wahoo were taken during the entire winter, the marlin fishing was much better shortly after the first of February.

Then came the striped marlin, and these turned out to be about twice the size of their white relatives. Everything was going fine for Mr. Wasey and his party when Mrs. Ann Moore, one of the enthusiastic guests, hooked what appeared to be a monstrous fish. Whatever it was, the creature disregarded all the accepted customs of a well-behaved fish that has been hooked. Mrs. Moore is no mean fisherman, but this was no ordinary fish, and after over three hours and a half the battle seemed to be pretty much of a draw. Since it looked as though this was a battle to the finish, Mr. Wasey relieved his tired fishing partner, secretly hoping that the fish, too, was getting tired. If Mr. Wasey had any idea that things would be better after he had relieved the "weaker sex," he was in for a surprise, as the fish continued to do about as it pleased. An argument of this kind could not last forever without one or the other weakening, and it was the fish that was on the losing end. The big blue body was being pulled close to the boat when it gave one more lunge and the rod gave up the ghost, splintering into thousands of long toothpicks. That last strain also proved too much for the fish, and after much effort it was partially pulled into the boat. This fish was called a "blue" marlin, but in appearance it is much like the black marlin of New Zealand. This particular specimen weighed 502 pounds.

Not long after, Mr. Wasey and Mr. K. B. C. Smith made fast to another big one. It was about ten o'clock in the morning when the fish was hooked. For six and one half hours, Mr. Smith struggled with his game; then Mr. Wasey took a three-hour turn. About this time, the boat was running out of gasoline, so the rod was passed to another fisherman on a fresh boat. The battle continued until one o'clock in the morning when the fish, by dint of a few extra maneuvers, cut the line on the bottom of the boat. In this case the fish was never weighed.

With the fascination of fishing unexplored grounds in the Bahamas and with most of the gamiest species of fish in the world to be found in Florida and Long Island waters, the East Coast salt water fisherman does not have far to go to find real game. Furthermore, he can fish north in the summer and south in the winter. Likewise, the West Coast fisherman has the same opportunity to follow his game both summer and winter, north and south. So why not "fish" America first?





Victor over the wily dolphin. Mrs. Ann B. Moore

(Left) Mr. "Kip" Farrington takes a big wahoo

(Top) Looking the prize over. Mrs. Ann Moore, Captain Tom Gifford, and Mr. Lou Wasey with their 502-pound catch

Anchored at the mouth of the Tapajos River. "Samona II," a steel cruiser of 148 feet, powered with two Winton-Diesels, was engaged in a scientific expedition which took her on an extensive voyage to South and Central America

Cruising the Amazon

By

JOHN VANDERVEER DEUEL

DEVIL'S ISLAND, marked by a silhouette of stately royal palms, the penal colony of French Guiana, recedes rapidly astern of the *Samona II*. We have left behind this "Land of Torment" where *Samona* had presented a highly inharmonious contrast — a yacht in a penal colony. In the terrific heat and brilliance of the equatorial sun at noon, we round Cabo d'Orange, most northerly point of the Brazilian coastline. The waters of the blue Atlantic stretching away to the heat-drenched shores of the "Ivory Coast" are a placid blue. Only our wake, widening in lazy monotony, brings action to the tranquil picture.

More than 24 hours before we pick up the pilot ship off the mouth of the Para River we come to the distinct line of demarcation between the muddy waters of the Amazon and the blue waters of the Atlantic.

Warm and silt-laden are the *cafe con leche* waters that curl from our bow; it is necessary to throttle the motors a bit to allow for the increase in temperature. At dawn, long before we view the jungle shores, we sight a large, two-masted schooner, dirty-white wings spread to the tropic trade winds that bring her swiftly down upon us. She is bringing our pilot for the river. Our motors are stopped and we drift; this is the designated latitude and longitude where the good book (South American Pilot) had told us we would find the pilot ship. A skiff manned by a crew of naked, bronze men bears down upon us with the pilot. The trade wind that came with the flaming dawn has died entirely; the pilot ship caught the last of the gentle subsiding puffs which brought her slowly about. *Espirit do Brazileiro* we read in bold letters on her bow, and in her lazy, now uncertain drifting, in those gently flapping sails, we find the epitome of all that is symbolic of the spirit of Brazil.

The dark-skinned pilot speaks only Portuguese. Under his guidance we begin the 125-mile run up the Para River, to Belem, a city of three hundred thousand, the capital of the state of Para.

For several reasons, we cannot enter the Amazon proper. First, it is necessary to have a permit from Rio de Janeiro to cruise the river; second, it is dangerous to enter the Amazon proper because of the huge bore wave that sweeps in over the delta region at low tide. There is no delta built far out to sea at the mouth of the Amazon, such as one encounters at the mouth of the Orinoco, for off the Amazon the sea has great depth and the silt brought down by the great stream is carried away by the strong undersea currents. Indeed, the ocean is rapidly eating into the continent; by an odd freak of nature the sea is driving inland huge waves of white sand. In many places south of the river these big dunes have buried trees. Along the north Amazon delta, around Maracá Island, and especially in the mouth of the Araguary River, the famous Amazon bore is at its best. When it sweeps in over the delta at low tide, its roar can be heard for eight miles. Varying in speed from ten to fifteen knots, and in height from ten to thirty-five feet, anything caught in its path is swept away. Later, when I flew low along the mudbanks and looked down into the rip tides and shallows, I could see immediately why skippers dread navigation in these waters. Changes in coast outlines are constant; shoals and flats form, only to be washed away like magic. Mudbanks which a few years ago barely showed above the sea are now covered with trees and dense growth. Poor lights and uncertain buoys, the impossibility of procuring good charts, and the ever-shifting currents and bars, bring many ships to grief and gray hairs to many a mariner.

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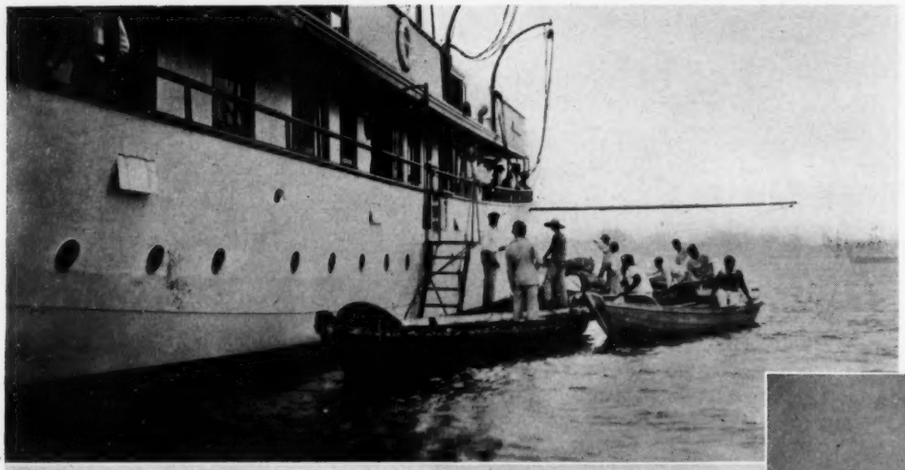
Once inside the mouth of the river, low, jungle-covered shores and islands began to appear. The current



Holding morning market at the "Samona's" rail

Bottom, left. Even the placid "furos" carry some débris

Below. Fishermen of the Lower Amazon region. These native craft are a motley crew

here on the outgoing tide reaches six knots. Soon we began to encounter queer sail boats, sloops, schooners and mongrels, with gaily colored hulls and canvas, manned by naked boys and men, all traveling under full sail and going like all-get-out. These are the fishing fleet and river traders of the lower regions which each day bring to the markets of Belem fish and jungle produce.

In the quarantine zone off Belem we were received with great pomp and ceremony. Because of the heavy afternoon winds and the resultant rough water, we found it more advisable to lay to anchor close in on the waterfront, rather than to risk taking all the paint off our sides lying along the bulkhead.

Belem is in semblance all that typifies a jungle town. And yet there is a grandeur about it that lifts it slightly above this category; sumptuous government palaces and paintings, luxurious clubs and rows of private mansions, built but a generation ago, are the abundant survivals of the bonanza extravagance that characterized the rubber boom period. Now Belem lives on the jungle. Its streets end in deep forest recesses, and in the equatorial dawn and dusk it smells of the jungle.

Headlines on the front page of the daily newspaper announced the arrival of one "Hiate Norte Americano *Samona Segundo*," and Monsieur Interventor, military dictator of northern Brazil, came down to greet us and extend a welcome to the land of *reis* and *milreis*. Unable to procure a permit from Rio immediately, the Interventor very kindly gave us a temporary one for his territory, and guaranteed our freedom in the adjacent territory up the river. We had no sooner cleared this matter up than we made the sad discovery that there was no Diesel oil to be had in Belem. It could be purchased, to be sure, but it would have to come by lighter from Pernambuco, in drums, to the tune of fourteen cents per gallon. Let me advise anyone with Diesel power, enroute to southern ports, to stop at Port of Spain, Trinidad, and take on a load of cheap oil. It costs very little more there than on the West Coast of America.

Fortunately, we still had sufficient fuel for the trip to the interior, and by ordering the oil immediately we were sure of it on our return.

The harbor of Belem is intensely interesting and full of activity. Always a few of the picturesque native sail boats are to be seen in the offing, and at sundown great numbers of them — all with gaily colored hulls and canvas — converged upon us as they lay in to make port, bringing strange cargoes from the depths of the river and jungle. They tie up so closely together in the little loading basin that when the tide goes out, leaving them stranded, they stand upright on their keels in the mud and lean against one another for support. The matter of cleaning the decks is taken care of by nature; every day in the year, at approximately three o'clock, it rains in Belem. During this fifteen to thirty-minute downpour the skippers "scrub down" ship and crew alike.

We took on another pilot. This one, an elderly fellow of dignity and silence, had a license which permits him to navigate vessels as far as Manaos, a thousand miles up the Amazon. He spoke only Portuguese and his salary was about the same as that of the pilot who brought us as far as Belem — approximately three-dollars-fifty, American, per day.

From Belem we wound for three days through narrow canals, "furos" that brought us ultimately to the mighty Amazon. The trip through these furos is indeed thrilling. Progression is a matter of twisting and turning continually along channels at times so narrow that the jungle growth reaches out from either side and touches the rail; luxuriant verdure is all about and here and there is set a picturesque native hut, the family dugout "cayuca" pulled up on the front porch. How glad the almost naked occupants of these thatched huts were to see us. From the time we came into view until we disappeared around some distant bend they waved everything they had. Our passage brought the first thrill in many weeks to these solitary and often fever-stricken dwellers of the "flowing road."

At last we emerged into the main channel of the Amazon. It was the beginning of the flood season and the mouth of the river was over four hundred miles wide. Here, some 160 miles from the sea, the stream is still well over one hundred miles in width. The depth is so great that we had to cruise right to the very banks to get the hooks on bottom as we anchored each night. We were now on a vast, yellow sea whose mighty, moving bulk we must buck as we churn our way upstream into the great valley of the Amazon.

Intrigue, mystery and romance are winged on the river's boiling crest, and our Indian interpreters tell us that before we have been two weeks on the river all Matto Grosso will know that a big white "cayuca" from across the sea has arrived. And within three weeks our presence will be idle gossip among the Wetotas, Putumayo and Hwambiza tribes of the far-away Andean slopes.

The heat was intense; after the morning shower the jungle fairly steamed beneath the terrific rays of the noon-day sun. At night huge gray moths, almost as big as crows, banged relentlessly against our screens, and a multitude of other creatures crawled about the ship. Even the most infinitesimal insects can produce hideous vocal vibrations, and the night was ghastly with their screams, with the call of the bull crocodile, and the freight-engine blowing of the huge "boto" fish as they came to the surface for air.

It was now past mid-December; the snow that melted in the Andes in August was just beginning to reach the lower limits of the river. One realizes the colossal power and magnitude of these mighty waters when he views the countless floating islands and the thousands of huge trees that ride the boiling current — derelicts torn away by the flood waters. This debris is a constant menace to navigation and a sharp lookout must be kept all day, for besides the surface logs there are also submerged obstructions. We were fortunate, and damaged only one propeller slightly in cruising over three thousand miles on the waterways of the valley. We did find, too, that the silt loosened our shaft bearings and caused some shaft vibration.

The tide is evident as far as six hundred miles from the sea and at times several tides are running up and down the river. Few, if any sail boats are encountered above this point. The normal flow of the river, above the tide limits, is about four knots.

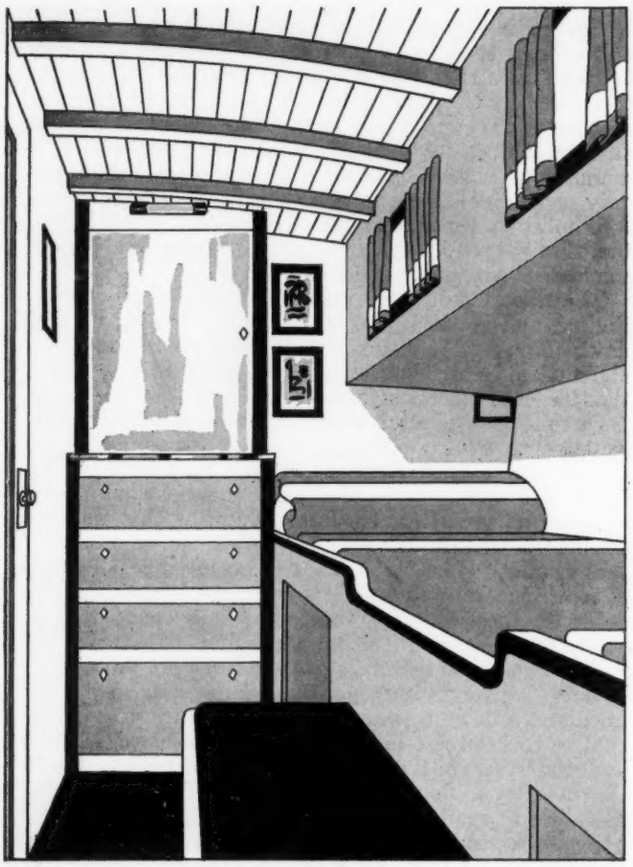
Our problem of navigation was more difficult than is usually the case. Paralleling the river in many places are furos — narrow channels leading back into the interior and then out to the main channel again some hundred miles farther upstream. Knowing that we were a scientific expedition, our pilot took us on many of these canals, which have other advantages besides that of reaching the back country, for there is not so much debris in these channels, and neither is the current so swift. Yet at any time of the year other than during the rising of the flood waters, this would be very dangerous, because, once aground, you would have to stay there until the following year. There are boats up the river that have been left high and dry in the back country, and the river waters have never risen sufficiently in that locality to float them again.

To those readers who are wondering when we are going to capture the large snakes and monkeys, let me say that it is not within the scope of this article to cover the scientific side of the expedition. I am writing this with the motive of passing on to the yachtsman first-hand information on the things that he would want to know if he were contemplating a cruise to this magic world.

Continuing upstream, we stopped for a few days to explore the black waters of the Tapajos, a river nearly as large as the Hudson. The banks were becoming higher and higher along the Amazon, and occasionally we found a semi-clearing where wild cattle grazed. In the

(*Continued on page 150*)

The fleet is in. River craft which each day bring to Belem, an Amazon port in Brazil, fish and jungle produce



Going Modern

✦

VI. A Modern Interior for a 65-Foot Cruiser Designed for Southern Use

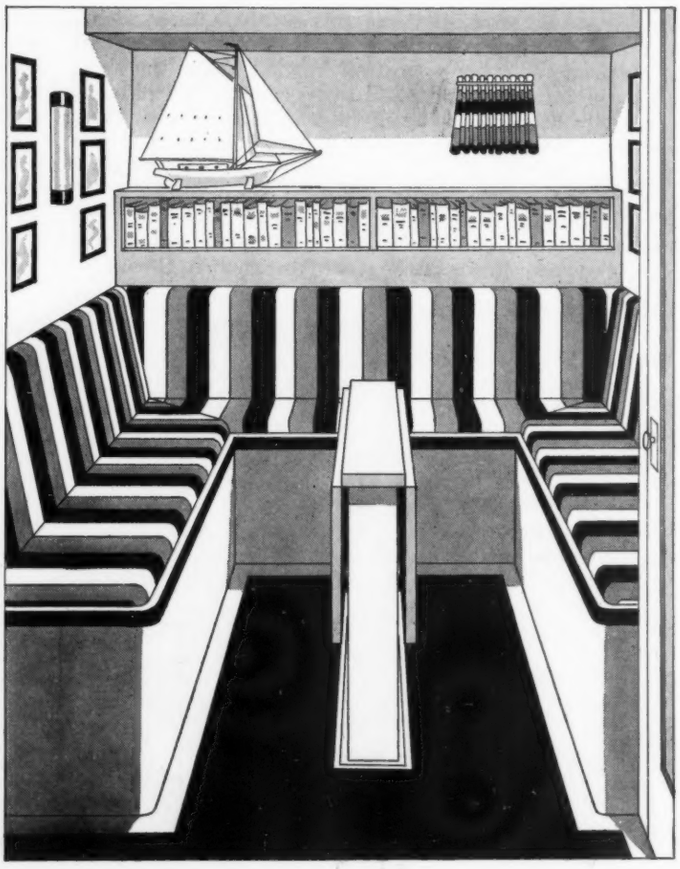
✦

By

LOU BLOCK

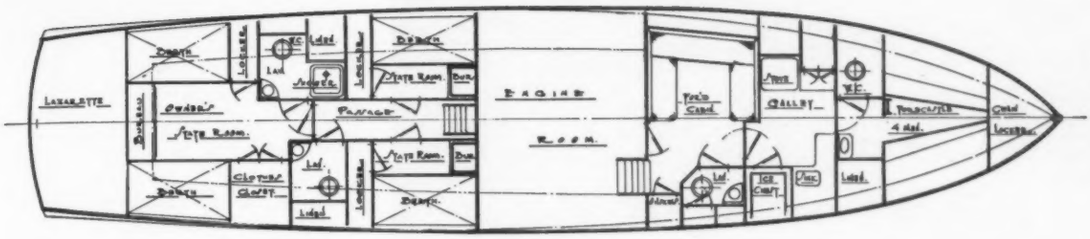
Each of the forward cabins is fitted with a wide berth to which has been added a short settee, built on

The dining space (right) has been rendered comfortable by the use of a three-sided settee, and decorative by the use of a long shelf above



A 65-FOOT CRUISER designed for southern use affords excellent opportunities for modern planning below. In a boat of this length, with its generous beam, the designer is able to provide many little conveniences which, without crowding, enhance the appearance of the cabins and increase the possibilities for comfort. It is the designer's aim to retain the spaciousness of the cabins and at the same time install all the essentials for comfortable cruising. In the boat with which this article is concerned, the owner's generously proportioned stateroom, the cabins amidships, and the dining saloon have been re-designed for publication here by the kind permission of the architect.

The accompanying drawings illustrate details of the cabins and the saloon. In the owner's stateroom two extra wide berths are flanked by short settees. So situated, the settees give a cozier appearance to the after end of the cabin, and carry out the crisp, built-in technique used throughout the room. Forward of the starboard berth is a wide locker, built with a setback arrangement on the



The accommodation plan of the 65-foot power cruiser designed for southern waters, by Chester A. Nedwidek

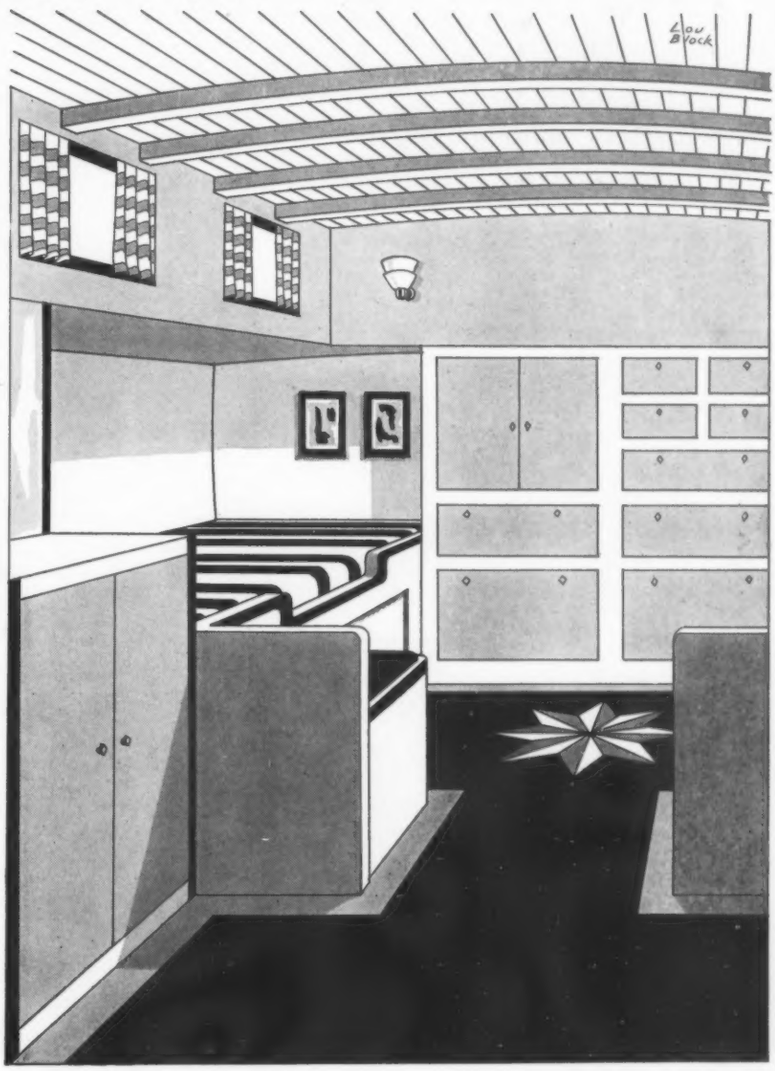
upper segment of which is a mirrored door. Narrow bands of chromium steel appear on the berths and on the settees, and have been vertically applied on the ends of the lockers, giving an attractive coolness to the white and gray paint used throughout. The light fixtures are of chromium steel with shell-shaped disks of clouded glass. The bureau at the after end contains variously shaped drawers, and a cupboard fitted with shelves. Black and gray linoleum with an inlaid eight-pointed star makes a suitable and practical floor covering. The only bright color in the cabin is in the pictures and in the covering on the berths. Also, the settees are upholstered in a dull red leather.

In the dining saloon forward, a three-sided settee around a table provides a very comfortable lounging and dining arrangement. The curve of the hull behind the settee permits the installation of a long bookshelf with space above for small articles of a decorative nature. The table, of natural mahogany, is set into a base of chromium steel. White and gray paint is also used throughout the saloon. The upholstery on the settee is a durable linen stamped with a striped pattern in three shades of red. The light fixtures are half-round cylinders of clouded glass with chromium ends. The port light over the bookshelf is covered with drapes of the same material as that used on the settee.

The smaller cabins forward of the owner's stateroom are identical in design. A wide berth, with a covering of blue denim, has a short settee built on. The dresser is glass-topped, and the upper portion, set back, has a mirror door and is fitted with shelves inside. Sliding doors on the side of the berth give access to storage space below. As in the other cabins, white and gray paint and black linoleum are used here.

The effect of the modern planning in this cruiser is to establish a feeling of coolness in the interiors, render them trim and shipshape in construction, and in every way suitable for southern cruising. Ample space is allowed for the installation of such additional conveniences as the owner may deem necessary. The costs of construction along the lines indicated here do not exceed those of more conventional designing. As a matter of fact, it will very likely be found that, for a custom-built job, the costs will be lower, because expensive bright woods are not used. Carefully selected, well-seasoned pine, which will take a good paint job, will prove entirely adequate for this construction.

The light fixtures and upholstery are all of standard manufacture, available at any decorating establishment, and are not more expensive than those usually employed.

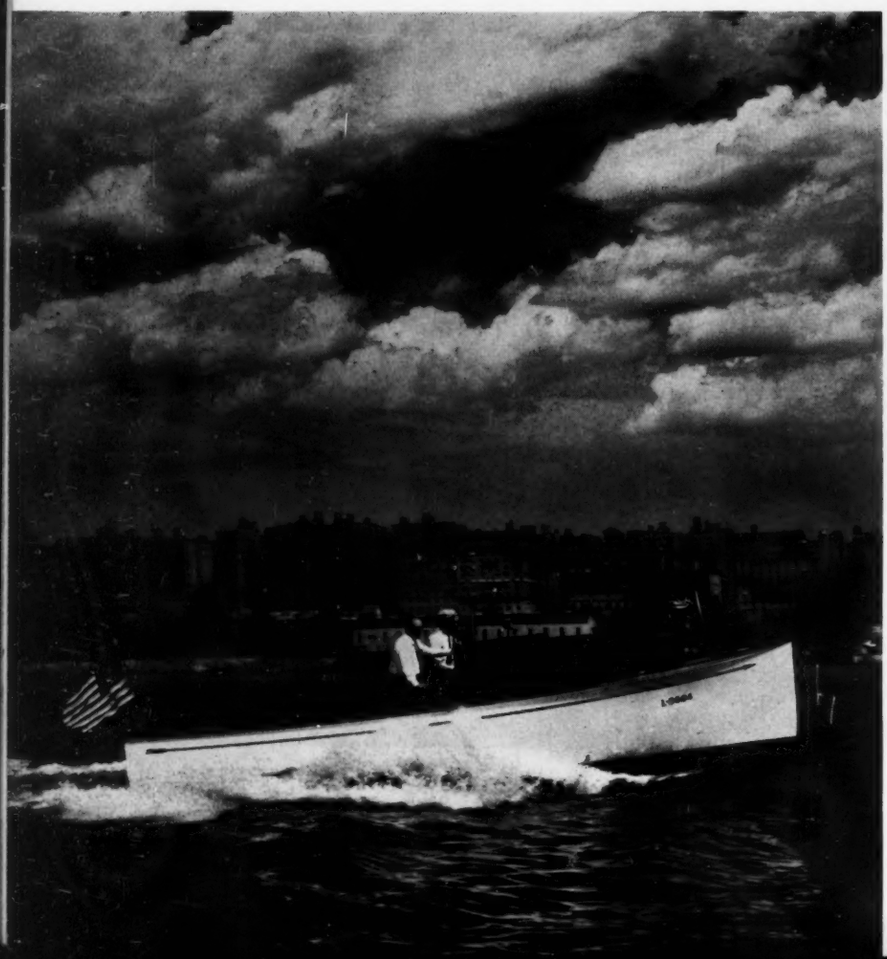


Achieving an effect of coolness, combined with trimness and spaciousness, in the cruiser designed for use in southern waters

An Elco 32-footer with an Elco-Buda engine

A Marblehead 32-foot cruiser with a Buda engine

Photos by M. Rosenfe



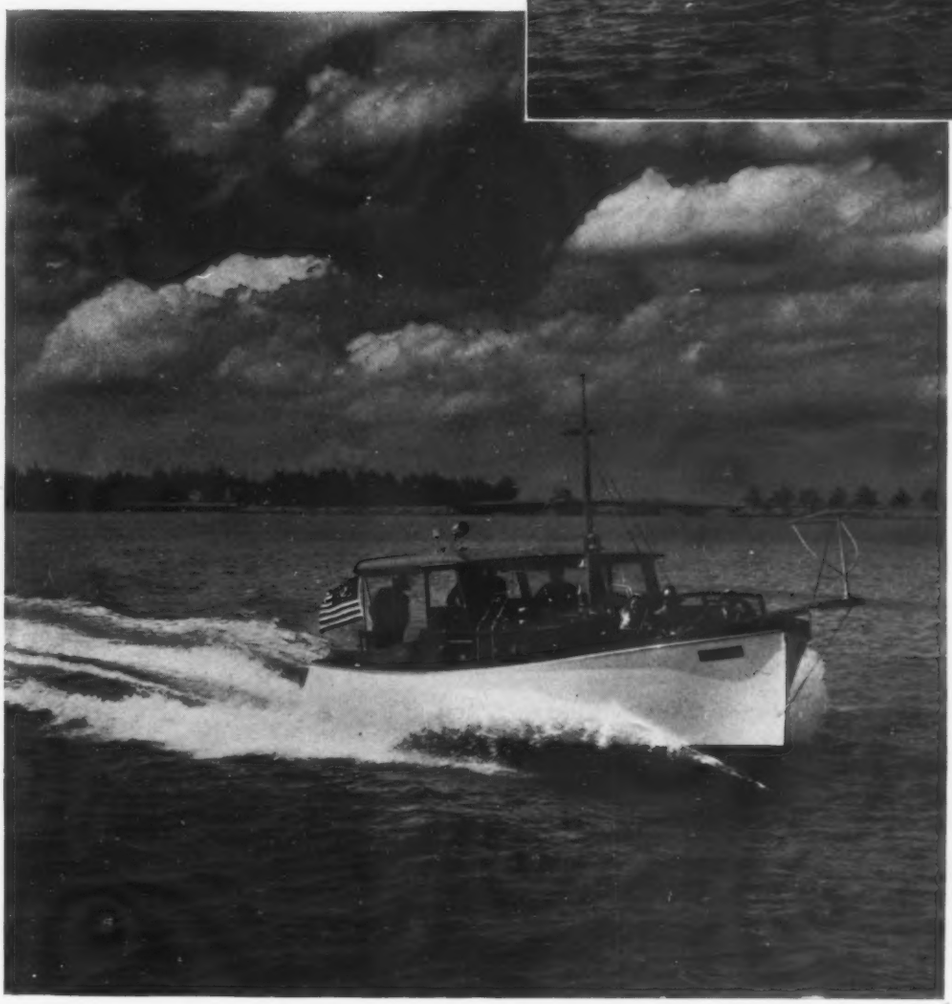
A 26-foot Richardson Junior (left) with a Gray engine

Freedom

+

The Stock Cruiser Affords
Unrivaled Means of Seeking
the Peace and Quiet of
the Open Water

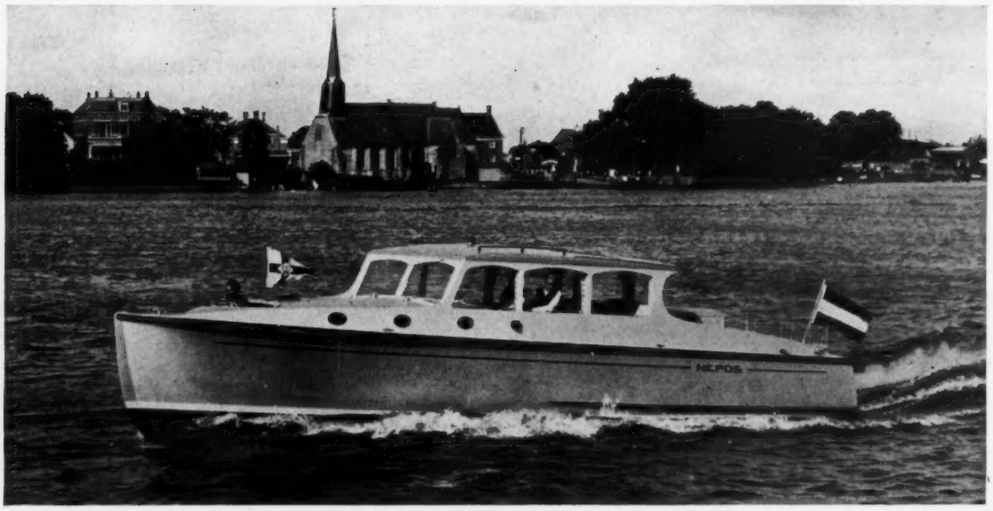
+

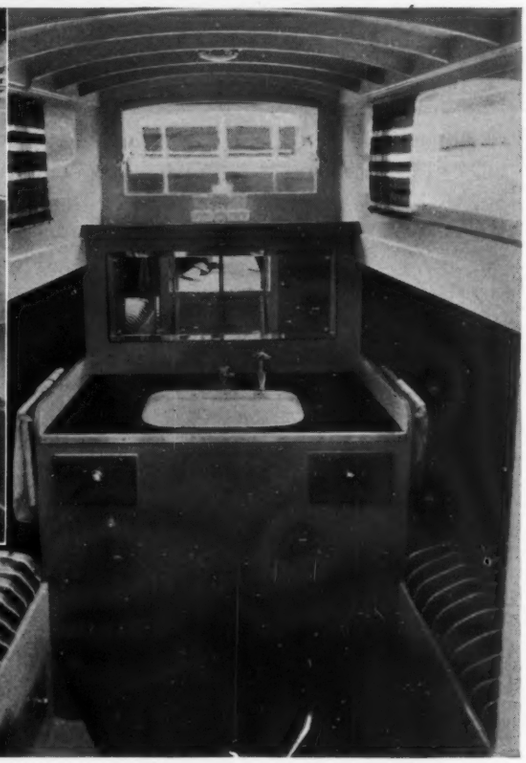


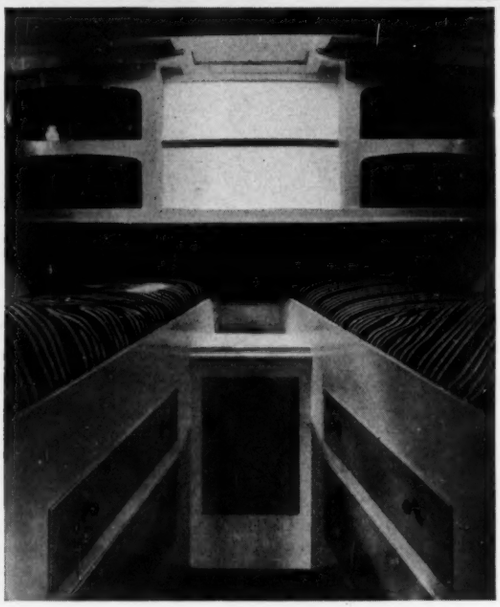
An a.c.f. 46-footer powered with Hall-Scott engines

A Matthews 38-footer powered with twin Hall-Scott engines

A Handsome 41-Footer of Modern Design







A glance at the accompanying reproductions should be convincing proof of the simplicity, beauty of purpose, and practicability of modern treatment as applied to the design of power cruiser exteriors as well as to that of interiors. The reproductions of the interior illustrate most effectively the efficient utilization of space made possible by the use of functional principles

The motor cruiser "Nepos" was designed by H. W. deVoogt, of Haarlem

The "Dauntless" as she appeared when the author found her in the Philippines. She was sixteen feet over all, with a beam of about five feet

The Lost Mariner

The Tale of a "Mystery Ship" of the Pacific

By J. E. MACRAE

AT ZAMBOANGO, in the Philippines, not so long ago, I ran across one of the queerest little boats I have ever seen in any part of the world. She first attracted my attention because, while evidently not a native boat, nor a ship's boat, she was quite unlike anything else afloat. She was more than half-covered with an accumulation of rubbish, and though she was under a shed roof, which gave her nominal protection from the tropical sun and rain, she had evidently been abandoned, and no sort of real care had been given her for a long time.

I cleared away some of the rubbish and found that she had a stern shaped something like that of a dory, with pintles and a rudder. But what took my eye at once was the name and hailing port, still legible — "*Dauntless — Honolulu.*" How had she come here? It seemed incredible that she had been sailed over the five thousand miles or more that separate Zamboango from Honolulu. Here was something to look up — a mystery of the sea, perhaps, as odd and strange as the *Dauntless* herself. A few inquiries speedily brought out all that was known in Zamboango.

The data on which this tale is based were gathered by the author from letters from Captain W. R. Lawrence, of the S.S. Montgomery City, *and from the files of the* Mindanao Herald, *and* Honiron, *the house organ of the Honolulu Iron Works.*

The boat had been reported to the Customs as having been found, beached in a bay, in one of the islands off the coast of Mindanao, stripped of all her gear and equipment, and the owner nowhere to be found. A revenue cutter was sent to the island and the boat was taken in charge, but though diligent search was made of the island and the fullest possible inquiries made along the coast of the adjacent mainland, no trace could be found of the man who had been the lone navigator of the little boat. She was brought to Zamboango and moored there to await the return of her owner to claim her. But nothing more was ever heard of him, and the boat, as boats will, was falling into decay and dropping to pieces from neglect.

When I saw the boat she was half submerged and partly covered with rubbish, so it was difficult to get a clear view of her. I should have had her cleared off and hauled out of the water so as to be able to measure and photograph her. But time did not permit, and as I expected to return to Zamboango within the next six months, I planned to do it then. On my return to Zamboango, much later than I had expected, I found that the Harbormaster had been cleaning up his domain, and boat, shed and all were gone forever, together with all the other rubbish. The port was clean and tidy in the extreme, but much less interesting. And *Dauntless* had disappeared.

Roughly, the boat was about sixteen feet over all and about five feet beam. Her draft I could not ascertain, but she seemed to have a bottom like that of a Swamp-

scott dory. There was some talk of an iron plate for a fin keel, but there is no certainty about this. She had a sort of clipper bow, and bowsprit about three feet outboard. The mast was stepped well forward, about like that of a catboat. Abaft the mast there was a raised house with a flat top fitted with a small hatch, perhaps a foot square.

The sides of the house sloped downwards and outwards to the deck and had a sort of scupperway around them which rather puzzled me till I figured out that this may have been a method of catching rain water. Aft there was a cockpit, about two feet by three, with an iron ring in the after starboard corner. The cockpit had a coaming about four inches high, and from there to the stern was a deck about three feet or so. The rudder was still in place, square, and it seemed to me heavy for the size of the boat, wooden, with iron straps and an iron tiller which came just over the edge of the cockpit coaming.

The remarkable feature of the boat was that it was sponsoned out from the fore end of the house to the stern, and while this gave more deck room it certainly gave her a most ungainly appearance. The mast was rather short, and had steel wire stays set up with turnbuckles to both sides and the end of the bowsprit. Wooden mast hoops still encircled the mast. She had evidently been rigged with a gaff and boom mainsail, but there was nothing to show whether or not she had ever set a jib. From the position of the mast, I should say a jib would have given her too much headsail. She must have been a slow and awkward craft to handle.

Sparks taking leave of his friends in Honolulu, ready to set out for his trek across the Pacific

The ring in the cockpit, I learned later, was for safety, as the skipper used to sit inside this ring, with a canvas apron tight around his waist and stretched to the coaming so as to make it practically watertight.

What manner of man was this who had crossed the Pacific in this ungainly and most unlikely boat?

\+ + +

I found the answer a few months later in Honolulu. Some time in the year 1923, a man named Ira C. Sparks arrived there. He said he came from Peru, Indiana, and that he was a carpenter by trade. He related how, as he worked at his bench one day, there came to him a vision of Father Abraham, who commanded him to go to Egypt and the Holy Land, following in the footsteps of Moses. This accomplished, he would receive a revelation of the true Word of God which he should then pass on to the rest of mankind. So, pursuant to the heavenly vision, he left his home and started for the coast. His funds were decidedly meager, so he beat his way as best he could, and in course of time arrived in San Francisco. There he tried to get work on a steamer bound for the Orient and his distant goal in the Near East. But never having been to sea before, he failed to induce any mate to sign him on. Why he did not go to the East Coast and seek the Holy Land by the shorter and easier route is another aspect of this puzzling story.

Not to be deterred, he made himself a packing case, and contrived in some way to have it shipped on a Japanese steamer bound for some Oriental port. In this box he stowed himself away. Connivance is clearly indicated here, for the packing case was stowed in an accessible place and Sparks was found soon after the steamer was well at sea, put to work as a stowaway and, on arrival at Honolulu, handed over to the police. He was not detained long, however, and again took to his trade, obtaining work at Pearl Harbor.

Sparks is described as a man of medium height, mild-mannered and soft of speech, and always courteous. He made no secret of his quest, and did not resent the remarks and raillery it drew forth. He made friends easily, and was well liked.

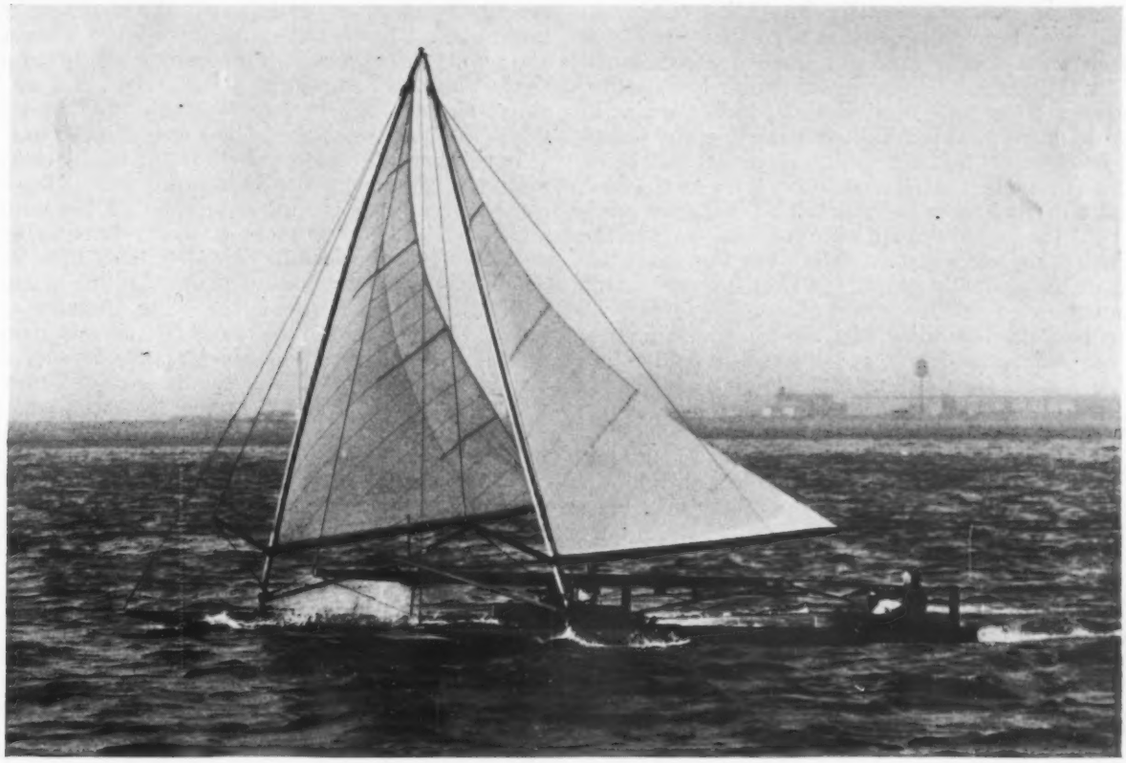
About this time he conceived the idea that he must go on his quest alone, and sought for a boat in which to make his voyage. First he got an old ship's lifeboat from the Inter-Island Company, and put a lot of work on it before he discovered that it was too far gone and could not be made seaworthy. Not to be turned from his purpose, he then decided to build his own boat, and this he proceeded to do on the waterfront, opposite the Honolulu Iron Works. He soon made friends with the workmen, and they would come and talk with him in their meal hours and help him with his work, especially with such iron fittings as he needed. Repeatedly the men warned him his boat was not suitable for such a voyage, and that he would never get across the Pacific. But to all such friendly warnings he had but one reply, a slow smile and a quiet, "The Lord will protect me." He had heard the Voice and could but go.

Undeterred by the scepticism of onlookers, unheeding of the criticisms of his boat, answering all with patient and unruffled good humor, and never by any sign showing resentment, he gained the good will of all. Sometimes, as the chance arose, he would take a job at his trade to earn a few dollars, and work on his boat in what spare time he had. He lived frugally, getting his meals in the cheap Japanese restaurants behind the Iron Works. Where he slept no one remembered. His whole existence centered in his obsession about Egypt and the Holy Land, and the true Word of God, which was to be revealed to him there, and in his boat as a means to that end.

At last the boat was completed, and he announced his intended departure on January 9th, 1924. And on that day, about half past twelve, he said farewell to his friends.

He chose that hour for his departure as that was the dinner hour at the Iron Works, and his numerous friends among the workmen would thus be able to see him off. As is the custom in the Hawaiian Islands, they hung leis, or wreaths of flowers, around his neck, and sang the plaintive and beautiful song of "Farewell My Friend." A few hearty hand grips, a few fervent "Goodbys and good luck," and he pushed off, hoisted his sail, and was soon out of the harbor and away on his lonely voyage.

(*Continued on page 126*)



Something new in sailing craft. The Sailplane, developed by The Elco Works. She has attained a speed of better than 20 knots

The Sailplane

By

MALCOLM McINTYRE

IN the issue of YACHTING for November, 1920, an article appeared which carried this same title. The following paragraph is quoted from it: "A great deal of time, brains and money have been spent in trying to perfect and develop the heavy-ballasted type of racing boat; but are they so much better now than they were in the beginning? A little faster, perhaps, . . . We believe that these boats have been developed about to the limit, and that something new in principle and radical in design will have to be gotten up to get really high speed under sail on the water."

During the past thirteen years Marconi rigs have grown taller, Genoa jibs larger, and parachute spinnakers have blossomed and ballooned out, increasing somewhat the efficiency of the sail plan, or power plant. Hulls have been "leaned out" and refined, but our old fat friend Lead Ballast is just as heavy as he used to be, and he will always maintain the old rule-of-thumb formula, "the maximum speed equals one and one-half times the square root of the water line length." So let us back off the keel bolt nuts and let Old Man Ballast sink to Davy Jones' locker.

Quoting again from the article, "The ideal theoretical fast sailboat should be one that will stand upright and carry her sail in any breeze, have no ballast in any form and only enough displacement to float comfortably the crew, sails and rig. At first glance a catamaran would seem to answer these requirements. But we designed, built, sailed, capsized and nose-dived three different types of catamarans during a number of years, trying to make them work, even after they had been abandoned, years before, by our forefathers. They were fast reaching under certain conditions, but it was only the weight of the windward boat and the platform acting as ballast that tended to keep them from capsizing. When driven hard they would lift, catapult the crew overboard and quit for the day, with the top of the mast headed for China. It took an acre lot to tack them or to jibe in."

The boat described in that article was a 34-foot hull having beam of only about two feet at the water line, with low Marconi rig and no ballast. Lateral resistance and complete stability were obtained by planes held out on both sides by long outriggers. The planes were inclined in and down at 45 degrees, the windward plane holding down and the lee plane lifting to counteract automatically the overturning force of the wind.

This boat proved the theory that this overturning force could be counteracted by the water pressure on properly placed angled planes. With a strong beam wind and smooth water, the first Sailplane was fast, but the planes were difficult to hold in alignment and they cavitated at the surface of the water, making them very hard to drive in a seaway.

My friends and neighbors of The Elco Works, in Bayonne, were much interested in my efforts, and with their assistance another form of Sailplane was designed and built. This was a light, skimming-dish hull, with a vertical centerboard and a sail held out to leeward at an angle of 45 degrees. This sail lifted like a kite and was so placed as to cause no overturning moment; but being at such a flat angle it lifted as much as it drove the boat and was not efficient in light airs. The necessary spars to hold out the foot of the sail were cumbersome and the complicated rig necessary to shift over the sail when tacking or jibing finally caused the abandonment of the experiment.

Scrap baskets were filled with drawings and figures, and many sailing models were built and junked before the Elco-Twin-Sailplane illustrated in this article was finally perfected. This craft has two long, light hulls, each with its own sail inclined towards the center at about 30 degrees from vertical, the trucks of the two masts being joined. Each hull has a centerboard which is inclined so that it is approximately parallel to the mast of the other boat and there is *no ballast*. The two hulls are held in parallel alignment by two cross struts of equal length. These are pivoted so that either hull can be moved ahead of the other, like a parallel rule, for different points of sailing. The hulls are shifted, or skewed, by two skew lines leading diagonally, which are wound on a drum and controlled by a hand wheel (See Fig. 1).

The booms are fixed at right angles to the forward cross strut by rigid links. On the wind, the lee hull is moved ahead a little, swinging the booms to leeward to their correct trim, close hauled. When keeping off, the lee hull is skewed further ahead until the correct trim of the sails is obtained. When sailing with the wind more than two or three points abaft the beam the lee sail commences to be blanketed by the weather sail and both booms are then swung forward nearly parallel to the forward cross strut and held by means of fixed sheets. The booms are kept in this position for a broad reach or before the wind, and the sails, acting like a squaresail, are not jibed when going from one free reach to the other. When the sails are in this running position their angle is about 10 degrees from vertical, so there is a substantial lift on the bow. When running before the wind the centerboards are raised as their stabilizing effect is not then required.

When tacking, jibing or changing course, the sails are trimmed entirely by turning the "skew wheel" and practically no effort is required. When luffing from a beam wind to by-the-wind, the helm is put down a little and no power is needed on the skew wheel to drop back the lee hull and so trim the sails. There are no backstays, sheets, etc., to handle except the fixed sheets which are used when the booms are "winged out."

In this boat the centers of effort and inclination of the sails, the center of lateral resistance and inclination of centerboards, and the distance apart of the two hulls, have all been figured to give complete stability without consideration of the hull's displacement (See Fig. 2). There is no tendency to litt the weather hull or bury the lee hull. In other words, the wind pressure on the inclined sails is exactly balanced by the water pressure on the inclined centerboards for all points of sailing except when the wind is aft, and the only function of the hulls is to hold and float the centerboards, the rig and the crew.

The cross struts are pivoted to the hulls in such a way as to prevent the hulls from rolling and still allow them individually to pitch freely. When sailing in a seaway there is very little motion to the spars and rig, as they take the average motion of the two hulls.

The comments of those who have sailed this Elco-Twin were interesting. Each one has remarked, first, on the thrill of real speed — well over 20 miles having actually been logged. Second, they speak of the ease of handling the craft — a little helm, a turn on the skew drum, and she's about, each hull turning on its own center. "Not at all," they say, "like a catamaran which has to turn on the common center of the two hulls!" Then they always exclaim over the fact that her way can be stopped and you can sail her astern without changing her heading. The fixed booms are, of course, the explanation of this fact. And last, they always comment on the boat's very apparent seaworthiness. When other sailboats are lying over on their beam ends, burying, rooting and griping in a strong breeze, the Sailplane *moves*, straight ahead, stands upright and "takes it" without any of these faults. It would seem that her only limitations are the strength of the rig and the force of the wind.

While it is difficult to forecast the ultimate use to which this new principle may be put, it seems obvious that the speed, safety and handiness of the Sailplane should make it ideal for a small racing class, and we may soon hear the call of "Ready about!" entirely drowned out by a chorus of "Hard askew!" from a fleet of hard-driven Sailplanes.

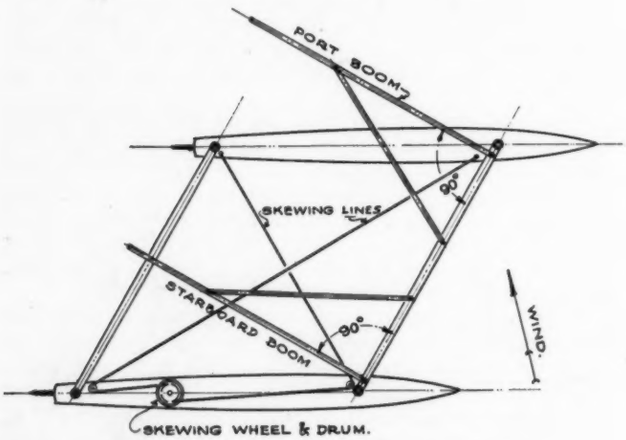


Figure 1. Showing method of trimming sails

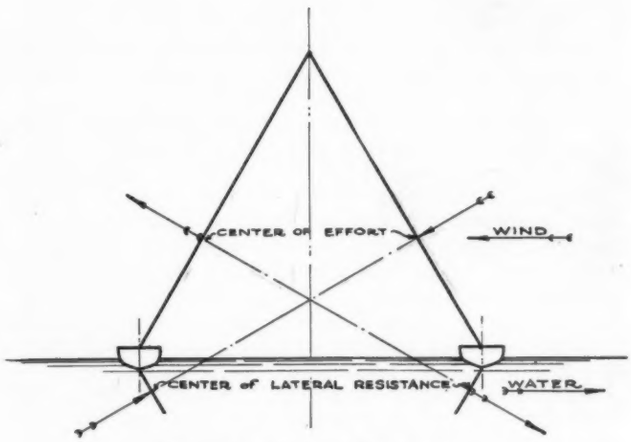


Figure 2. Principle of the Sailplane

Associated Screen News, Montreal

Mooring at a crowded pier presents a difficult problem in helmsmanship. At the Seigniory Club, Quebec

"Mind Your Helm"

Steering a Motor Boat Under Varying Conditions

By CHARLES H. HALL

ACCORDING to the old time seagoing formula, a sailorman should be able to "Hand, reef and steer." The motor boatman need not concern himself about the first two requirements but should certainly be able to steer. To do this properly he should know how his boat will act under various conditions of helm angle, speed of boat and direction in which the screw is turning. There is a great deal more to steering a motor boat than merely twiddling the wheel when she is going ahead in open water. Her helmsman must know with certainty what she will do when the rudder is thrown over suddenly and the engine reversed, how she will act when backing, how she can be turned in close quarters, and what may be the effect of a strong wind on one side or the other. All this in addition to being able to handle her alongside of a pier or float.

The size and shape of the rudder is quite an important factor in a boat's steering and so is her model. I have seen boats which were so cut away at the ends that they would twist around and try to look at you on the least provocation. One in particular, on which I spent a busy day, was such a silly steerer that I could not let go of the wheel long enough to light a cigarette without having her swing two or three points off her course. Another, in which I made several long runs, would travel along steadily in smooth water, needing barely half a spoke of helm to keep her straight as long as no one changed position. If the cook walked out of the galley into the after cabin to set the table, the boat would run off her helm in a wide sheer. In rough water, and especially with a quartering sea and a good breeze, she was a wild thing, almost terrifying in her sudden swoops and plunges. One of the craziest things to steer was the old monitor in which I served in Spanish War days. Like the motor boat just mentioned, she was full below water, especially aft, and apparently carried an unstable eddy under each quarter. Putting the helm over disturbed this eddy and altered the flow of water to her propeller and rudder and set up unexpected reactions against her hull. She was a beast to steer. In the first place, there was usually a certain amount of slack in the gear due to the stretching of the manila purchase in the line. Her flat bottom and full run, heavy displacement and low power made her a nightmare. The helmsman would give her a spoke or two, and nothing would happen. He'd give her another spoke, and wait for results. Then, about the time that he had decided that she needed a little more helm, 'round she would come in a hair-raising sheer that set him climbing the wheel to meet her. Once a man was accustomed to her peculiarities, however, and had learned to be patient, and give her plenty of time she was more amenable to direction. By the end of the war our best men could keep her on a fairly straight course, but even then she was a wicked creature to put alongside a pier.

Steering a sailing craft is a simple matter as regards

the action of the rudder. The water flows aft along the hull, the stream from each side joining abaft the rudder. When the rudder is moved, say to starboard, this streamline flow is disturbed and the pressure on the starboard face of the rudder is increased, while that on the port side is diminished, causing the stern to be pushed to port. An important thing to remember is that the stern moves more than the bow; a boat usually pivots about some point pretty well forward, the stern swings off, and the whole boat takes a sidewise motion. Indeed, if the helm be put over suddenly to clear an obstacle close aboard, the bow would clear it while the stern might swing off enough to strike it. Again, the boat ranges ahead on her course, skidding more or less sidewise, before she really gets into the turn and begins to climb off into a circle. Watch a skilful man put a launch alongside a float; as the helm is put over she will swing her stern rapidly and skid into position alongside.

Let us consider the behavior of a motor boat of the cruising type, in smooth water on a windless day. With a single screw boat, there is a strong current of water from the screw flowing aft past the rudder, which is most favorably placed to get the full benefit of this stream. As long as the rudder is kept amidships, it has no influence on the boat except for its frictional resistance. As soon as it is put over, say to starboard, however, things begin to happen. As in the windjammer, the pressure increases on the starboard side and decreases on the port side. But the stream from the propeller is directed against the rudder, increasing these effects, while the water thrown off by it aft and to the side has its influence. With a right hand screw, the water from the upper blades is pushed to starboard and that from the lower ones to port. As the water has greater pressure the deeper it is, the lower blades have more influence than the upper, and tend to shove the stern to port. This increases the steering effect with port helm and decreases it with starboard helm. A single screw boat with a right hand screw will, consequently, turn more easily to starboard than to port, though the difference is slight.

Things are different when going astern. Every sailing man knows that the action of the rudder is reversed when the boat has sternway. The water comes to the rudder from astern and the pressure, with the rudder held to starboard, is built up on the port side of the rudder instead of the starboard side, pushing the stern to port. In such a case he has to "shift the helm for sternboard." This same effect occurs in a motor boat, but with additional complications. The screw draws its stream from aft and thrusts it against the hull. When the rudder is put over to starboard, there is the same increase of pressure on the after (port) face due to the boat's motion astern. There is also the stream from the propeller thrown against the hull, that from the lower blades impinging on the deadwood at an angle while that from the top of the wheel strikes the fuller part of the run more nearly square to it. The effect is that the stern usually goes to starboard, though not always. She may back straight astern, without swinging to either side. Other conditions, such as the direction of the wind, are apt to determine her course. With the rudder to port most of the forces work together instead of in opposition, as in the last case, and the stern will swing rapidly to port. When wanting to turn your boat in close quarters, try to turn her to starboard, as that will be much easier.

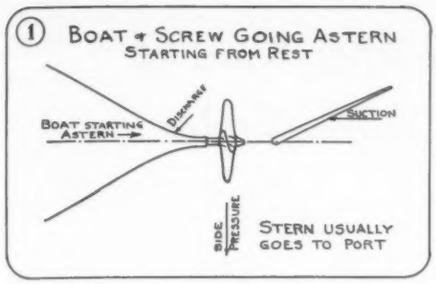
So far we have considered the cases in which the boat and screw were both moving together, either ahead or astern. When the boat is moving one way and the screw the other, the problem is more complicated and one cannot always predict with certainty just what the boat will do. However, let us see what should happen in smooth water and on a calm day. With the boat moving ahead, let the engine be reversed, the helm being kept amidships. Here the discharge current from the screw acting against the hull, and the sidewise pull from the lower blades, will tend to make the stern go off to port, the boat ranging along on practically her old course but at a slight angle to it, then working off slowly to starboard.

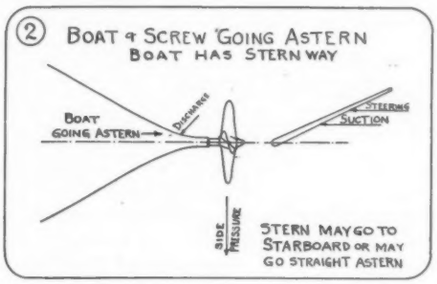
If the rudder is pulled over to the starboard side as the engines are reversed, there is doubt as to what will happen. As the boat is going ahead, the pressure on the starboard side of the rudder tends to throw the stern to port, while the suction from the propeller, acting on the rudder, tends to neutralize this steering effect and the result lies with the thrust stream from the screw working against the hull and the side pull. The forces in question nearly balance, though the stern will usually go to starboard, but not very much.

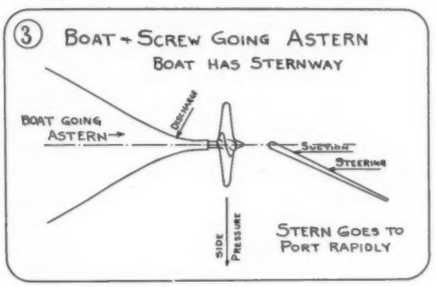
With the rudder put to port and the engine thrown into reverse, the forces involved work together more. The boat may waver a little at first, but then she will swing her stern decidedly to port and work off to that side as she gathers sternway.

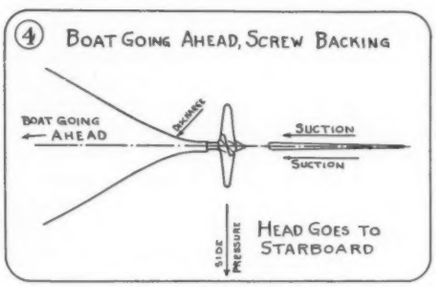
When the boat has sternway and the engine is set ahead, the effect of the rudder is much the same as in the last case. With the helm amidships, there will be neither steering effect nor suction on the rudder, and the discharge current and the side pull of the screw nearly balance each other. She may go straight, or she may swing a little to either side. You have to experiment and find out what will happen. With the rudder moved over to starboard and the boat going astern, the steering effect of the pressure on the after face and the side pull of the screw tend to push the stern to starboard, but the propeller sends a strong stream astern and against the starboard side of the rudder and this sends the stern to port, usually quite rapidly. With the rudder on the port side, the stern usually goes to starboard.

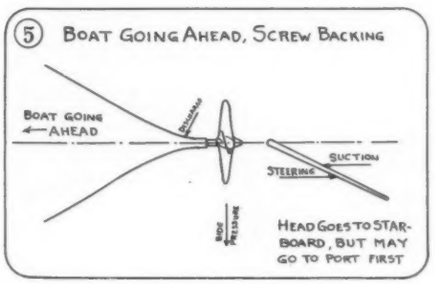
The situations outlined above refer only to the short time during which screw and boat are working at what we might call cross purposes; as soon as either headway or sternway is attained, the usual steering effect controls. But the action while the boat is nearly at rest may be most important. When she is dead in the water, the first few turns of the screw tend to pull the stern over as well as to start the boat moving ahead, especially if the top of the screw is not far down so that it pulls a hole in the water for the first few revolutions. But a study of the boat's actions will make it easy to turn her in an extremely limited space, without putting her stem against the stringpiece. As said above, it will be better, as well as much quicker, to make the turn to starboard. Start the engine ahead, with the helm aport and the rudder, of course, to starboard. Her stern crawls over to port as she starts to move, and she keeps on turning to starboard as she gathers way. When she has gone as far as is safe, reverse the engine and shift the helm to starboard. She will keep on swinging her head to starboard as she slows down, and will swing more as she gets sternway. Let her range astern, and then go ahead full speed and put the helm hard a-port. She will shake herself and seem to swing around as if on a pivot, her bow going rapidly to starboard. If in a small space, a slip between two piers, for example, don't let her get much headway, and you will find that she will turn without going far ahead or astern. The greatest turning effect seems to be before the boat gathers much way, especially when changing from astern to ahead.







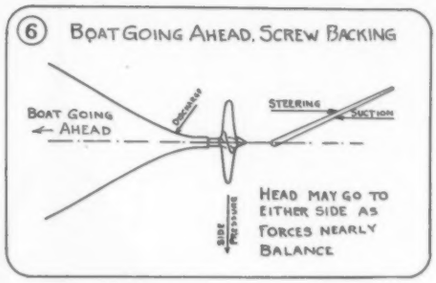


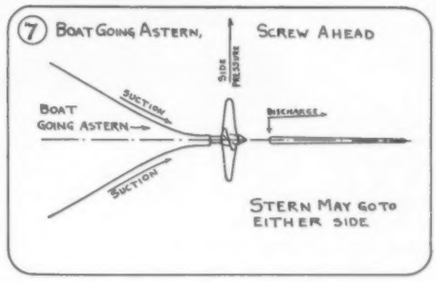


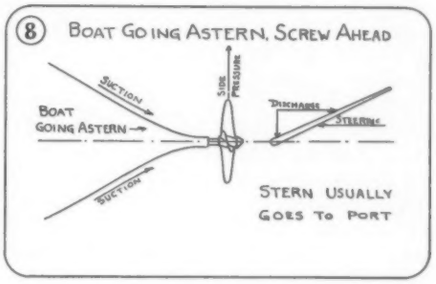
So much for the boat with only one propeller. The twin screw vessel presents a somewhat different set of problems. With the two screws set some distance out from the center line, the turning effect of each is considerable as long as the shaft does not make too much of an angle with the center line. One of the early twin screw vessels of the Navy had her shafts at such an angle that the push of the screws was directed practically through the axis about which she turned, the result being that she handled very badly with one screw going ahead and the other backing! It did not seem to make much difference which one was set ahead, she paid little attention to it. With the twin screw motor boat, though, this should seldom be the case as her shaft lines are usually not far from parallel to the midship line. The direction of rotation is important; both screws should turn so that their tops go outboard. While there is a small gain of efficiency with inturning screws, there is a distinct loss in handling. The U. S. S. *Alabama* was so fitted and she was a beast to handle; I saw her once, during Army-Navy maneuvers, nearly go ashore on the southern side of Fishers Island.

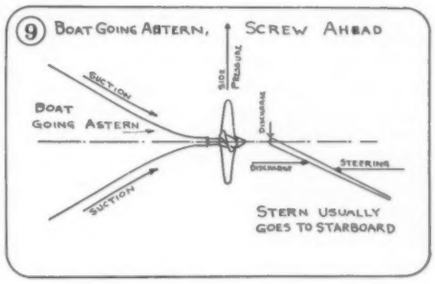
With both screws going ahead, the twin screw boat steers like any other, the side pull of the screws balancing each other. When the rudder is put over, the slip stream from the screw on that side acts on it, but mainly on the after part. When both propellers are going astern, the rudder governs; with the helm amidships, the boat should back straight if there is no wind. The great advantage of twin screws is in maneuvering, especially in close quarters. By running one engine ahead and the other astern, the boat will turn her head toward the side of the screw which is backing. She will not absolutely pivot but will make a small circle. She will take longer to make a complete turn but will do it in a small space. The rudder should be kept amidships in this maneuver.

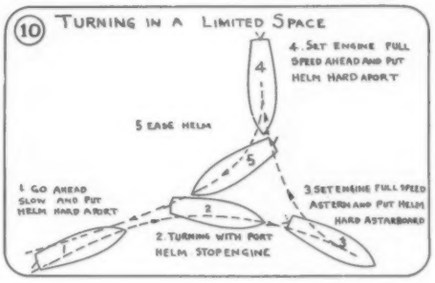
(Continued on page 136)










10 TURNING IN A LIMITED SPACE
4. SET ENGINE FULL SPEED AHEAD AND PUT HELM HARD APORT
5 EASE HELM
1. GO AHEAD SLOW AND PUT HELM HARD APORT
3. SET ENGINE FULL SPEED ASTERN AND PUT HELM HARD ASTARBOARD
2. TURNING WITH PORT HELM STOP ENGINE

Another Kind of Double-Ender

+

A Discourse Concerning a Form of Yacht Hull That Has Many Friends

By WILLIAM ATKIN

WE NEVER closed the blinds, nor drew the shades of the Mizzen Top house at Huntington. And so, had you looked into its workroom one Sunday several years ago, you would have found Mr. Starling Burgess and the author comparing notes and ideas concerning small cruising yachts.

Some excellent cocktails appeared from the galley and — well, disappeared; scratch paper cried out for the cargo of sketches it all too soon carried; ideas crystallized; notes blended; and out of it all appeared, a few weeks later, the lines and sail plan of a little cruising yacht that has come to be known as *Dormouse*.

One rainy Sunday, months later, *Dormouse* was launched, having been built for Mr. Elihu Root, Jr. And a sweet little craft she is: 22 feet 9 inches over all, 20 feet on the waterline, 7 feet in breadth, and 3 feet 4 inches draft. Her sail area is 250 square feet. Rigged as a knockabout she is as handy as a gimlet. Most of us know how fast she is, how able, and how satisfactory. One is likely to conjecture about these three features — speed, and ableness, and satisfaction. Mr. Jasper Morgan says they "just happen in some yachts." Of a certainty the trio live happily in *Dormouse*.

Now, when a man with pencil and drawing paper conjectures, he is likely to switch on the light. Thus conjecture becomes realism; and in this particular instance, realism takes the form of a small yacht — a double-ended yacht.

Dormouse has sections very thick through the garboards; she has tumble home above the waterline; her waterlines snub off into parabolas forward; her keel has a gentle drag, and is deepest at the sternpost; she has a transom stern and turtle back deck; and very modest overhangs. She is remarkable on the wind; perfectly balanced; and a lovely thing to sail.

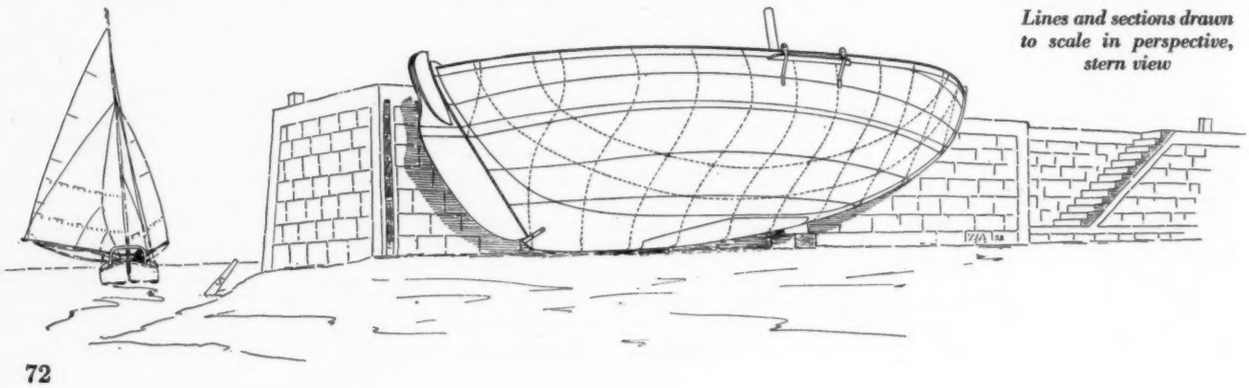
For years to come she will be a prototype. And we shall all be a-borrowing of her characteristics. But without a sip of those magic cocktails that Starling Burgess and I imbibed at the Mizzen Top the blending of these may not be so happy. Suppose champagne had been served that Sunday several years ago? Then what?

My conjecture in this case is that she might have taken the form of the double-ender illustrated here by lines, in perspective; by a silhouette; and by the usual cabin plan, too. If you wish to spend a few Sundays in engrossing occupation, get out the drawings of the lines of your boat and convert these into true perspective.

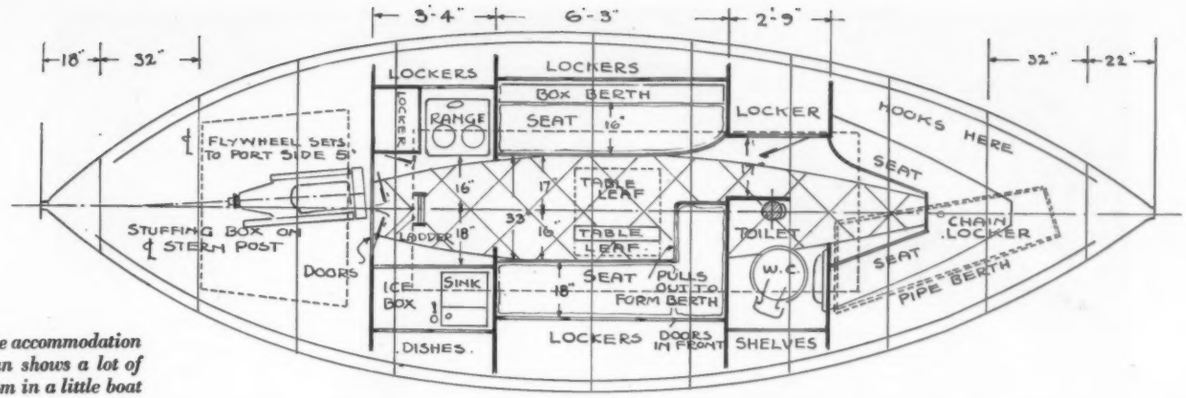
Double-ended yachts have enraptured yachting folks before. For instance, there was the Norwegian *Eric* developed by the late Bill Nutting and Arthur Hildebrand; *Faith*, *Hope* and *Charity*, about which YACHTING published some comment some years ago; and Sam Wetherill's self-steering *West Island*, and his excellent *Tidal Wave;* nor must I forget the Colin Archer *Dragon*, owned by Henry Bixby. There is much to be said for the double-ended yacht.

And there being so much to say, it occurred to me that by combining *Dormouse* sections and Colin Archer ends that a sterling design would result. About this time Mr. Scott O'Dell, writer and adventurer, looked me up, wanting a single-hander in which to re-explore the western coast of Mexico. And if he is not murdered and eaten in his quest, I suppose we shall hear how his ship behaved. Those are inhospitable shores.

Weston Farmer and the Sage of Dunedin chide me for always naming my yachts before they are built. Well, this trip I shall fool them. Plainer than Jane is this one; simply *No. 311. Three hundred and eleven!*



Lines and sections drawn to scale in perspective, stern view



The accommodation plan shows a lot of room in a little boat

Many bottles of india ink have gone through the bows of my pen to reach that figure.

But to return to *No. 311;* she is 30 feet over all, 26 feet 8 inches on the water line, 9 feet 4 inches in breadth, and 4 feet 9 inches draft. Displacement 15,500 pounds, ballast 7,000 pounds, half inside, half out. The sail area is 410 square feet, 103 square feet being in the staysail, 307 in the main. For many excellent reasons the rig is that of a knockabout, with main boom end inside the sternpost.

It is gradually being proved that multiplicity of standing and running rigging is superfluous. Mast struts, spreaders, topmast shrouds, cranes, and jackstays contribute nothing more than windage.

That excellent little cruising yacht *Mumsey*, designed by Nat Herreshoff, carries her mast with a single shroud each side and a single headstay. *Dormouse* is rigged in this manner; *Tar*, Mr. Russell Corey's 31-foot knockabout; *Tessa*, a 26-footer, the latter having cruised to Bermuda and back while owned by Mr. Root. Then there is the Crowninshield *Raven*, and one or two others which for the moment I cannot remember.

The mast, with tripod standing rigging, should be somewhat larger in section than would otherwise be the case. However you look at the problem, the simplified system for standing rigging is lighter, stronger, better.

No. 311 carries but two shrouds each side, a headstay, topmast stay, and runners. Nothing else. There are two halliards, both of flexible wire. The staysail carries a club. And that is the extent of her rigging.

The tiller is long and flexible; one cannot steer well with a short, stiff-hinged tiller. Tillers look swell with picturesque curves; but they are not worth a damn.

The deck plan is more or less orthodox, with its house and cockpit. It may be of interest to learn that the gasoline tanks for the auxiliary motor are *on* the cockpit floor. Here any spillage simply flows out through the scupper pipes. Tanks are fitted under the cockpit seats. If shut-off cocks are placed in the cockpit it is obvious that the chance of fuel getting into the bilges is remote. It is quite uncomfortable enough in the cabin of any small boat in rough water without the discomfort and danger of smelly gasoline.

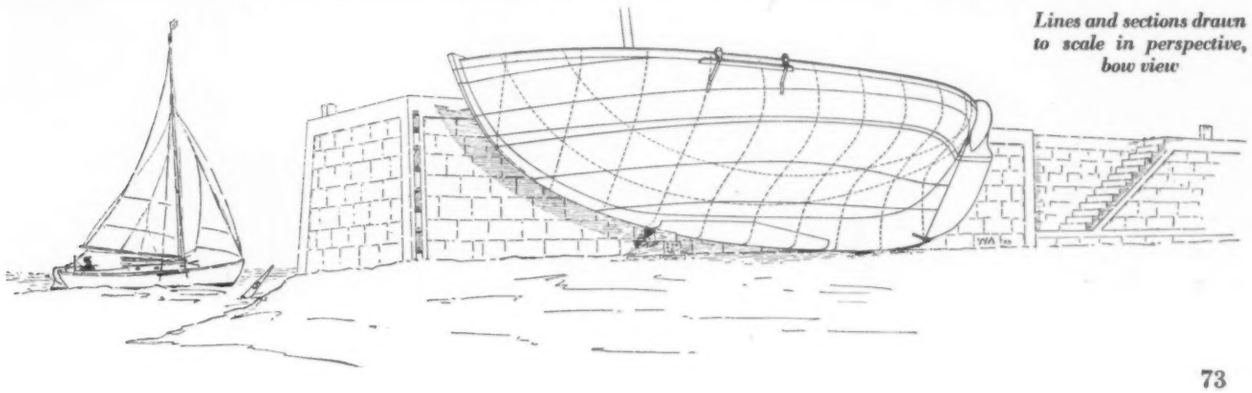
Mr. Francis B. Cooke, author of *Single Handed Cruising*, and a number of other equally good books on small yachts, says: "Yachtsmen's ideas as to the ideal cabin arrangement are likely to change." Yes, there is fickleness on this subject. One gets busy and conceives what seems to be a perfect arrangement. By the time the yacht is built other ideas pop up and then it is discovered that the galley is improperly placed — that the toilet is unhandy — that the berths are uncomfortable — that everything is a muddle. We seldom know precisely what we want, and if we get it we don't want it. So perhaps I shall say nothing about the cabin arrangement of *No. 311*. It is here to look at, anyway.

At any rate, the accommodations fit the hull; the whole thing has been worked out, floor widths, berth widths, headroom (nearly 6 feet), heights, and all that sort of thing.

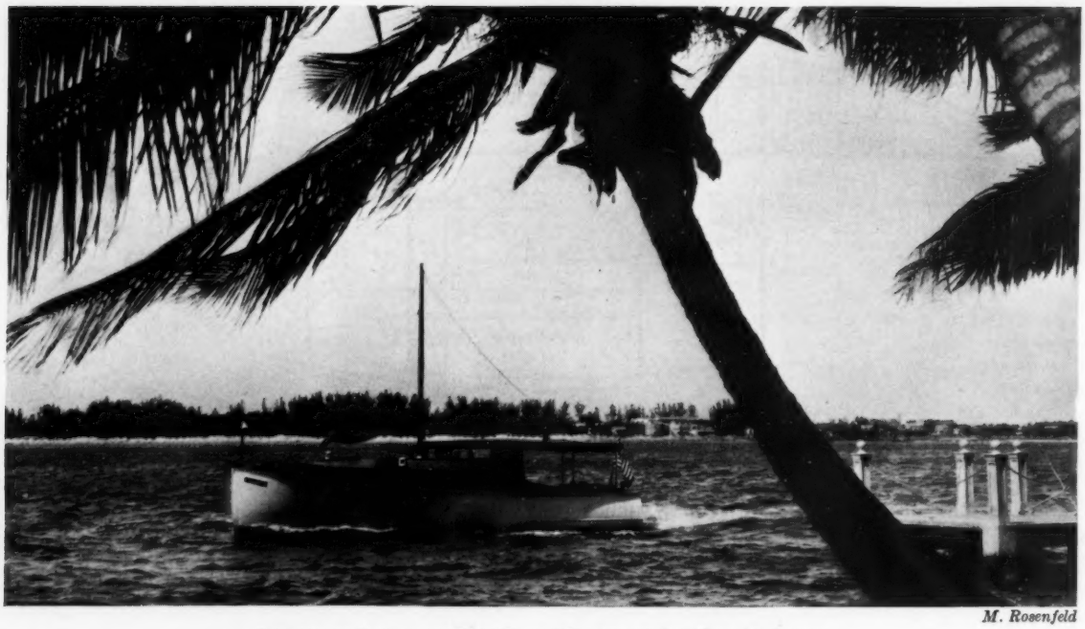
The construction follows the practice of the day; neither excessively light nor excessively heavy. Planking is 1¼ inches thick; frames, 1¾ inches by 1¾ inches on 10-inch centers; deck, 1¼ inches; with the rest of the scantlings in correct proportion.

It is rare to see lines published in perspective, such as Douglas Urry cheered us with in YACHTING with his delightful ketch *Nonsuch*. One gets from lines like these an excellent picture of hull form — a picture almost equal to that of a model. The process is simple enough, once the principle is grasped. And the labor is fascinating — but long.

And so I inscribe these illustrations to the cause of the double-ender — to Phil Rhodes, to the spirit of Colin Archer, and to Jack Hanna.



Lines and sections drawn to scale in perspective, bow view



M. Rosenfeld

A power cruiser, a coral beach, a palm tree and a place in the sun

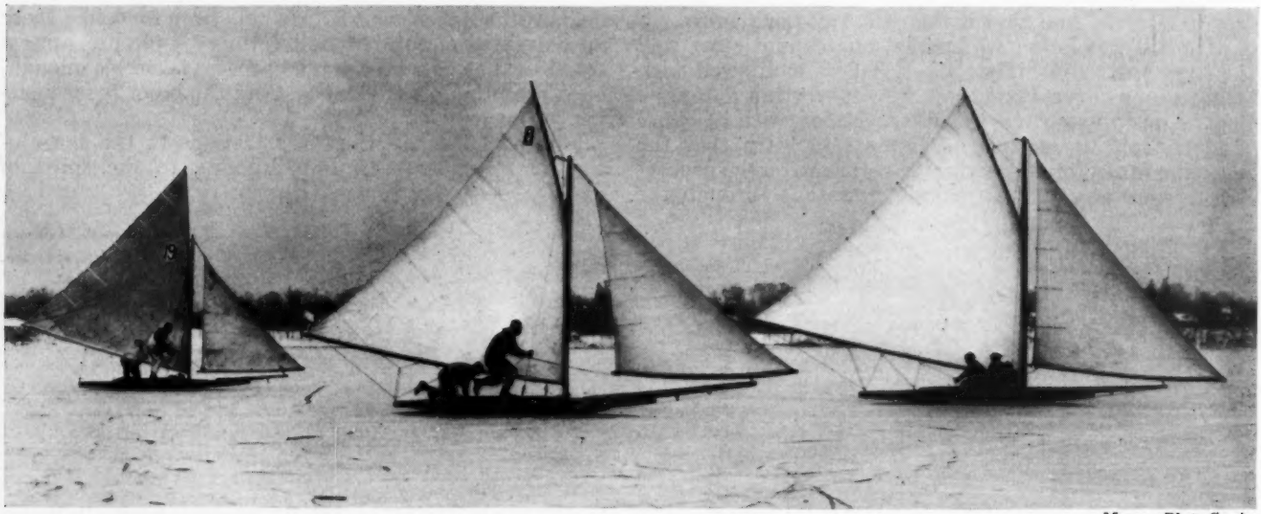
The Month in Yachting

Along With the Frostbiters

DESPITE snow, rain, sleet and raw, disagreeable weather in general, thirty-one Frostbite dinghies turned out for the Sanctioned Dinghy Regatta held by the Larchmont Yacht Club on December 16th and 17th. A heavy snowstorm on the two preceding days, followed by sleet and fog, kept five or six "dinks" from making the trip down by trailer from Boston, travel by automobile being distinctly hazardous, if not impossible. *Zenith* came down from Boston a week ahead, *Sweet Pea* managed to make the run from Providence on Saturday in time for Sunday's races, and half a dozen or more "dinks" trailed and towed across the Sound from Manhasset Bay to augment the North Shore fleet.

Saturday afternoon saw the Class B boats in some tuning-up races, and the Class A boats in two innovations in dinghy racing — a team match and a Treasure Hunt. The team races were between five "dinks" representing Larchmont and five more from the Essex Yacht Club. Larchmont had no difficulty running away with two straight races. The following were the team skippers: Larchmont: Dick Hill, Drake Sparkman, Alex. Gest, Phil Patton, and Ken Millett. Essex: Walter Rowe, Sam Wetherill, Ben Harrison, H. Stockder and Ed Develin. Due to a lack of wind, the Treasure Hunt developed into a rowing, sculling and paddling race, finally won by Ed Develin, in *Splinta*.

A light nor'easter lured the "dinks" out Sunday morning, and a downpour of rain greeted them during the first race. The Race Committee, headed by James D. Sparkman, scored a 4-bagger by announcing: "There will be a 20-minute recess for crews to get on their oilers." The suggestion was quickly acted upon, and in a few minutes skippers and crews appeared in all sorts and descriptions of storm clothes.



Morgan Photo Service

In contrast to the scene above is the start of an ice scooter race on Lake Ronkonkoma, Long Island. The boat in the center, sailed by Commodore George M. Clark, of Sayville, was the winner

Fortunately, there was enough breeze to sail five races during the day, in anything from light airs to a fairish breeze. Both of the regular classes, A and B, were divided into divisions, the newer boats being identified by red pennants, and the older and somewhat slower by green ones.

Carl Weagant entertained some 200 people at the club on Saturday evening with excellent movies of his cruise from Newfoundland in *Marit*, and a trip to the West Indies in *Pinta*. Rod Stephens wound up an enjoyable program with some fine films taken during *Dorade's* cruise in Norway last summer.

Following is the point score of the leading dinghies:

Class A, Red. *Fifi*, Sam Wetherill, 36; *Sweet Pea*, W. J. Dyer, 24; *Tara*, W. Roy Manny, Jr., 23.

Class A, Green. *Nellie*, Phil Patton, 33; *Caniche*, F. Bache, 26; *Kerchoo*, Ben Harrison, 25.

Class B, Red. *Mae West*, Dick Hill, 32; *Snowball*, Bob Bavier, 29; *Eskimo III*, Alan Clarke, 23; *Huskie*, W. Inslee, 23.

Class B, Green. *Windy*, Clair Farrand, 18; *Loon*, Arthur Knapp, 16; *Sister*, Clarence Smith, 14.

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Some Thoughts on the America's Cup Match

THE announcement of the challenge for the America's Cup a short time ago was the signal for a tremendous wave of yachting publicity in Yankee newspapers throughout the country. It was "first page" stuff for the New York dailies, and some of them gave up a whole inside page in addition. This country was getting decidedly "yachting conscious."

Of course, the big wave has receded, as all waves do eventually. A few minor waves of the same character have appeared since, to be sure, but on the whole, the excitement has died down as quickly as it flared up. At least, it has died down in the American newspapers. But not in the yachting papers in Great Britain. Not an issue appears but we read of the challenger, *Endeavour*, an expected improvement on the successful *Velsheda*, and what a splendid chance she has of lifting the trophy which for so many years has defied all attempts in that direction.

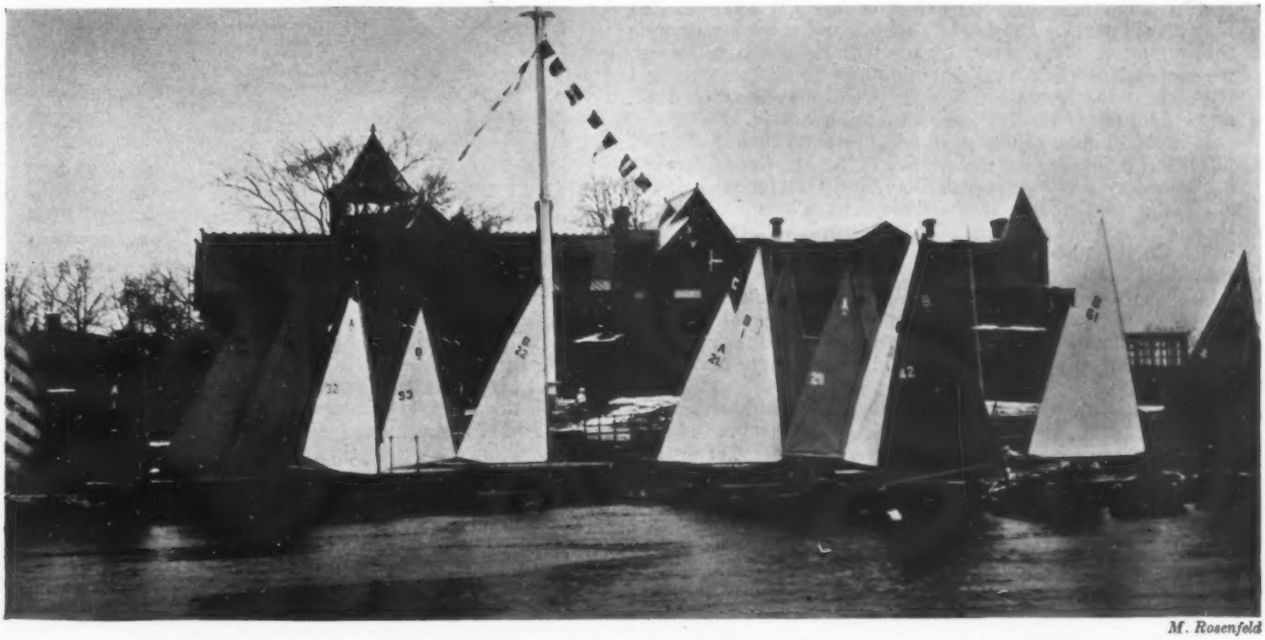
Speaking of the changed rules under which both challenger and defender will be designed and built, and of *Endeavour's* chances, Major B. Heckstall Smith, a leading British critic, makes the following comment in the *Yachting World:* "I believe these terms and 'rules' that we revised in September, 1930, after the last race was sailed, will give us an equal chance. . . . My sentiment — patriotic if you like — leads me to believe Charles Nicholson on equal terms can build as fast a boat as any American designer. . . . I think that *Endeavour* has a better chance of winning the Cup than any yacht built in the present century."

The British are really all steamed up over the situation. They point to the fact that they are a lap ahead in the development of Class J boats — Nicholson turned out *Velsheda* last year, while we stood pat and did nothing. *Velsheda* beat *Shamrock V*. And *Endeavour* will be an improved *Velsheda*. They have, therefore, two boats better than *Shamrock V*. What can we turn out which will be better than *Enterprise*?

Continuing, they argue that there won't be any more "skinned out" racing machines (like *Enterprise*) — the new rules prevent that — so both new boats will be on a par in that respect. The American defender won't have the advantage of a super-light mast, as did *Enterprise* when she defeated Sir Thomas's last green challenger — the new rules prevent that, too. And the experts agree that those two points are by no means to be laughed off. They are something to ponder over.

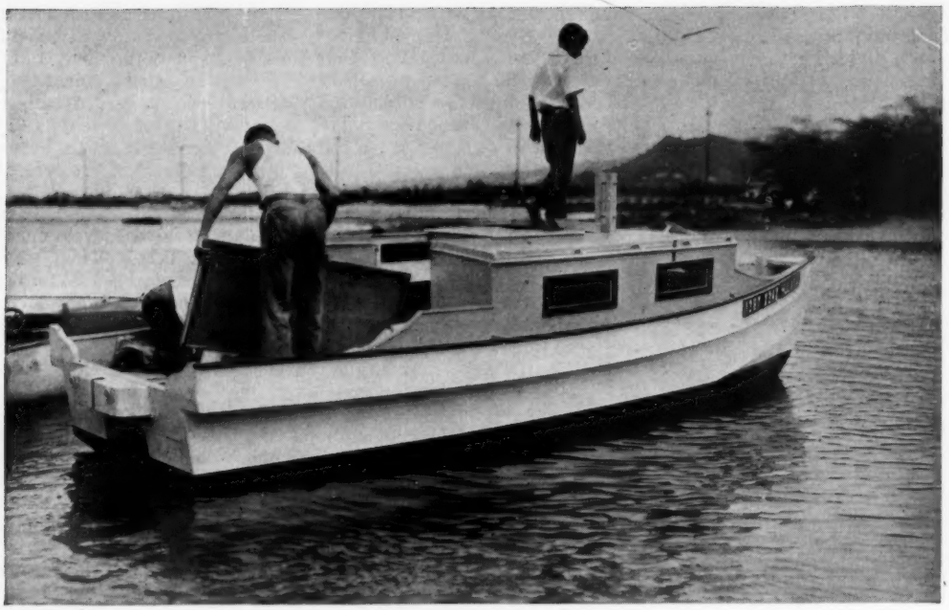
British preparedness is always unavoidably retarded somewhat through the necessity of taking a month's time for the Transatlantic crossing. But this year this disadvantage will be nullified to some extent, at least, by the fact that *Endeavour* is scheduled to be launched on April 15th, while the American defender is not expected to take her initial plunge into salt water until some two or three weeks later. The tuning-up period for both boats will therefore be practically of the same length. Thus Great Britain gains another point.

There is another point which I might add, which enhances the challenger's chances — provided you agree that it is a point. And that is, that *Shamrock V* was a "smooth water" boat — at her best in smooth going — and that with the exception of the first race, she met conditions of sea distinctly unfavorable to her. Anyone who saw that first race in 1930 must agree that *Enterprise* was fortunate to win. She beat *Shamrock* down the wind, on the first leg, because she "tacked to leeward," and made far better use of her light sails than did the challenger. On the close fetch back to the finish, in a moderate breeze and smooth water, she barely held the advantage she got on the run down wind. *Shamrock* was going just as fast to windward —



M. Rosenfeld

The Frostbite fleet at ease while skippers and crews dry out and enjoy lunch at the Sanctioned Regatta of the Larchmont Yacht Club on December 17th



Here's a little 20-foot power cruiser built in Honolulu on the model of the Japanese sampan fishing fleet of that port. She was designed by A. H. Myhre. The construction is simple and she has proved very satisfactory

"Trade Wind," a 25-footer, was sailed by Harald and Hans Hamran from Norway, last March, to New York, via the Canary Islands and the West Indies, in 98 days

in smooth water — and was beaten solely because the American craft was better handled "down wind."

In the following three races, in lumpy going, *Shamrock* was outclassed to windward — her hull form, plus her heavy rig, were her undoing. To say nothing about the infinitely better handling *Enterprise* received at all times.

It is my belief that Charles Nicholson, designer of *Shamrock V*, *Velsheda*, and *Endeavour*, learned his lesson. *Velsheda* has an entirely different hull form than the last *Shamrock*. The wily Britisher was looking ahead to those open-water conditions off Newport. From the lessons learned from *Velsheda*, *Endeavour* should emerge a much improved craft — especially to windward in a lop of a sea.

All right, now that we have half-lifted the cup for the challenger, let's see if there is a ray of hope for the Yankee defender.

Admitting all the British claims, for the sake of argument, there are still several things to cheer American yachtsmen. I believe we know more about masts and rigging than do the British. Checkmated on the weight of masts, I have an idea that we will develop a somewhat lighter, and much stronger rig than our adversary, and possibly one with less windage. Though we can no longer place sail-handling "gadgets" below deck, I still believe that American ingenuity will place them *on* deck, making for faster and more accurate sail handling.

It is the opinion of many American experts that in the last five matches for the Cup the showing of the American defenders has been due no little to superior handling, both forward of, and abaft, the mast. The professional crews have been far ahead of those on British challengers. And the American "afterguards," which do the "headwork," have had it all over the British. Frankly, I believe we are far ahead on both these counts. And I believe we are going to stay there — for a while at least. I doubt if any racing craft of anywhere nearly equal size, has ever been handled as well as *Enterprise* was under Harold Vanderbilt. And Mr. Vanderbilt will be in charge once more next September.

So far, no British challenger has even approached her Yankee adversary in preparedness. They don't go at it as hard abroad as we do over here. Nowhere near the same amount of testing, experimenting, and trying out of spars, sails, rigging, and so on. Not nearly so much "tuning up." Thoroughness was the keynote of the *Enterprise* organization. Many believe *Weetamoe* would have been chosen as a defender had she received the same attention as did *Enterprise*. Any good racing man appreciates the value of being properly prepared. The Yankee defender will follow in *Enterprise's* wake in this respect.

Just one more thing. The American craft will once more "tune up" off Newport — her crew and afterguard will learn how to "get her going" in the lumpy, offshore sea in which the final

races will be held. This is far more important than many people realize, for many a "smooth water skipper" is at a distinct disadvantage when confronted with lumpy seas, especially if the breeze is light or moderate. From what I have seen and heard of racing abroad, smooth water is the rule, and open sea conditions the exception. Will this be another stumbling block for the British?

Nevertheless, and notwithstanding, the fact remains that quite a few American yachtsmen believe that we are very possibly headed for trouble — serious trouble. But it's pretty early to admit even the possibility of defeat. The Burgess-designed defender is under construction at Herreshoff's. "Mike" Vanderbilt is already busy organizing his afterguard. Plans are well under way to circumvent this latest British challenge. And I have a hunch that they will be successful.

SAMUEL WETHERILL

Motor Boat Registrations Show Increase

FEDERAL registrations of motor boats in the New York City Customs District in 1933 show these comparisons with 1932: 16% more new inboards launched (1,016 in 1933 against 873 in 1932); 19% more new stock runabouts (211 against 177); 44% more new custom-built inboards (331 against 230); 20% more used motor boats sold (5,101 against 4,257). Because of the changed regulations requiring all outboards on Federal waterways to be numbered, the outboard registrations increased 31 times (4,751 against 151). Other classes compare as follows, the 1933 figures being given first, then the 1932: Stock cruisers, 86 against 102; inboard boats built by amateurs for their own use, 388 against 364; converted to inboard power, 251 against 260; brought from other districts, 266 against 206; miscellaneous, 218 against 185; total additions to Federally numbered fleet in district (including otuboards), 6,502 against 1,675.

Total additions to the numbered fleet (including conversions to power, removals to district, etc., as well as new launchings) have been: 1927, 1523; 1928, 1755; 1929, 1530; 1930, 1885; 1931, 2017; 1932, 1675, and 1933 (including the jump in outboards) 6,502. THURBER CUSHING

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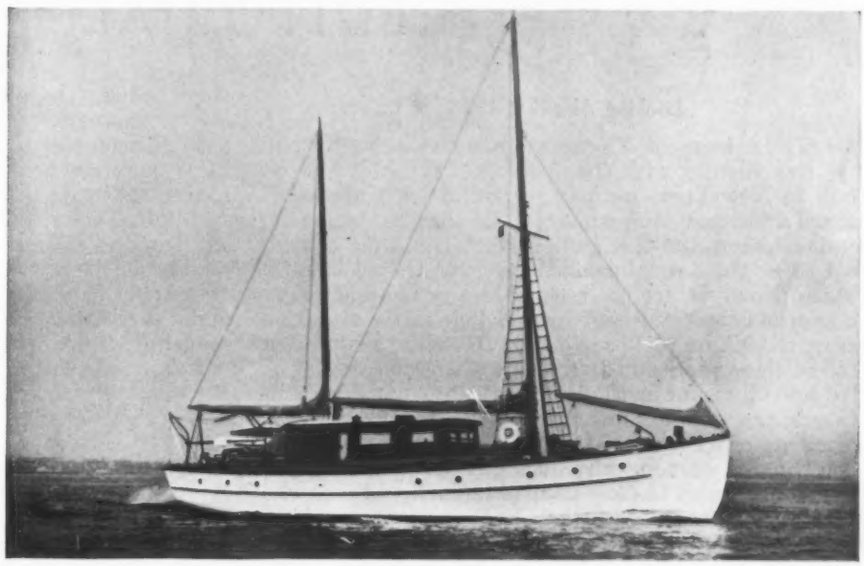
Four New Classes for New England

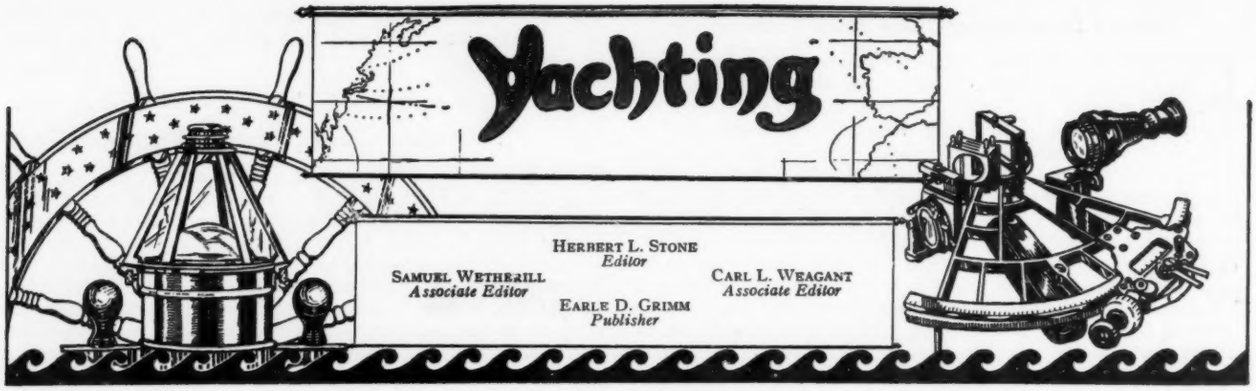
FOUR new one-design racing classes are being built for a quartette of New England yacht clubs, the largest number being ten 16-footers designed and built by Luders for members of the Fisher's Island Club. The others are as follows: Six auxiliary 18-foot knockabouts from designs by Crocker, and building in Lee's yard at Harwichport for members of the Stonehorse Club, organized last summer; seven 18-foot knockabouts from designs by Dunbar and building in Lamb's yard at Scituate for members of the Stage Harbor Yacht Club, another new yacht racing organization; and six 14-foot cats from designs by Clyde Bigelow, and building in his yard at Monument Beach for members of the Cataumet Yacht Club. W. U. SWAN

"Bluebill," typical of the increasing number of motor sailers, combines the speed and certainty of a power cruiser with the comfort of a house boat and the security and economy of a sail boat. She is 60 feet over all and was designed by Wm. H. Hand for John C. Spring, of Boston. A Hall-Scott engine gives her a cruising speed of 10 knots



A snug and colorful yacht basin in Key Biscayne, Florida, the land of winter yachting and fishing

Richard B. Hoit



EDITORIAL

Looking Ahead at 1934

AS THIS issue of YACHTING will reach its readers coincidently with the opening of the Motor Boat Show in New York, we may be permitted, perhaps, to hazard a forecast as to what may lie ahead of us for the coming season, the first gun of which is usually considered to be the annual exhibition at the Grand Central Palace. Now, we are not seers, and any prophecy may be knocked "galley west" by a change in the situation before the ink on this page is dry. However, a survey of the last three years and an analysis of present conditions give some basis for making a guess as to what lies ahead of us during the next few months.

In spite of what the nation, and the whole world, has been through economically during the last three years, boating as a sport has lost none of its hold on those who turn to the water for recreation. Yachting programs have not been curtailed, and boating activity has declined very little, except in the use of some of the larger-sized yachts. It is true that the cost of yachting has been cut all along the line, but most of those who already own boats have found ways to keep them afloat and to race and cruise as much as formerly. Where we have marked time has been in building new boats and in buying new equipment. The naval architect and the boat builder and manufacturer have been the chief sufferers from the depression. This was due not only to curtailed purchasing power, but also, in the case of those still able to buy, to the uncertainty as to what lay ahead, even as recently as six months ago.

But 1934 finds a vastly changed condition and a much better outlook, both psychologically and actually. Business is better, bank failures have practically ceased, and the fears of a year ago have been largely dissipated. This has already resulted in the placing of many more orders for new custom-built yachts than at any time since the depression started and in a growing demand for used yachts. Both of these signs foreshadow a much greater demand for new standardized boats that will, we believe, materialize at the Motor Boat Show.

The prospect of an America's Cup match this season, together with several other international races, both on the Atlantic Coast and the Great Lakes, and the running of a Bermuda race, furnish additional incentives to get afloat. The last America's Cup year was unusually active afloat, it will be remembered, in spite of the crash of the year before.

In addition to all this, the price situation is very favorable to the purchaser, and never in recent years has one been able to get as much for his money as now. Manufacturers have come down "to brass tacks" in concentrating on the essentials and cutting out the frills and fluff. Today, the small boat predominates, and instead of the expensive playthings of the past, we find plainly finished yet substantial craft that will give full measure of enjoyment, priced to meet what the average man can afford to spend. Builders have realized that the sooner small boats are taken out of the luxury class, the better for the future of the sport and the industry.

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So, we look confidently for greater buying activity at this year's Show, and expect to see a much enlarged fleet afloat when the season opens in the spring. But one must bear in mind, if he is a prospective purchaser, that after the past three years the boat builder, and the engine manufacturer as well, are not stocking up as they did formerly. They are building only to fill present needs; to make sure of delivery in time for the opening of the season, one must order early. This means at the Show. One will have plenty of opportunity there to see what the market affords, to study values, types and equipment, and to make up one's mind. Then, the prospective purchaser should not delay in seeing that his order is booked. Otherwise he may see half the season slip away before he finally gets afloat.

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The New Ocean Racing Rule

THE Cruising Club of America announced last month the new rule of measurement for ocean racers on which it has been working for the past two years. The task before the rules committee was the difficult one of measuring fairly a large fleet of existing yachts and at the same time safeguarding those yachts from boats that might be built to the rule and thus profit from whatever advantage under it the yacht designers can chisel out. Whether or not it is a good rule, time alone will tell. It is, however, an earnest endeavor to get something better than we have at present, and into its making went the best effort of men of wide experience in ocean racing and in the designing of cruising yachts.

IN THE WORLD OF YACHTING

Acme Newspictures

JOHN M. L. RUTHERFURD

TO John M. L. Rutherfurd, who is admired by his fellow yachtsmen as much for his gracious personality as for his skill and sportsmanship as a driver of racing motor boats, speed over the water is meat and drink. As this is being read he is probably tearing up and down the inland waterways of Florida in his trim white racer, "Imp," commuting between Palm Beach, his winter residence, and Miami; or tuning up the two new Packard engines which he recently installed in "Imp" to make her eligible for the forthcoming International 12-Litre races in Florida, and also for the future Gold Cup Class events.

"Jack" Rutherfurd started his racing career in the high-powered stock runabout classes and successfully barnstormed the coast from Massachusetts to Florida, entering every possible event. In the fall, when racing in the North comes to an end, he migrates to the South in order to get more of it.

Two of his better known stock racers are "Becky" and "Why Not," both of which have garnered for her owner a large and varied assortment of silverware. "Imp," the famous old Gold Cup racer, is the latest addition to the Rutherford fleet, and in her he has entered innumerable races, always with his equally skilled wife, Mrs. Maud Rutherfurd, riding by his side. He has not yet achieved real success with "Imp," due largely to a troublesome engine. However, with her new motors and Rutherfurd's steady hand at the wheel, "Imp's" wake will bear watching.

John M. L. Rutherfurd is a resident of Sands Point, Long Island, in the summer, and of Palm Beach in the winter. Among his many club memberships he counts the New York Yacht Club, the Seawanhaka-Corinthian Yacht Club, and the Montauk Yacht Club.

Under the Lee of the Longboat

by Cap Stan

THE year 1934 promises to be an international year in a big way. In this country alone there will be five international contests, to wit: America's Cup races, Twelve-Metre International races, Canada's Cup races on Lake Ontario, in Eight-Metre yachts, Six-Metre team races with England, and the Seawanhaka Cup race in Six-Metre boats. Then there's a good possibility that the Sound Interclubs will have another go at the Bermuda One-Designs, and that the Barnegat sailors will go to the mat once more with their Canadian cousins. Yes, and don't be surprised if the Frostbiters get into the international game before many more moons come and go.

+ + +

After the conclusion of the 1933 Fastnet Race the predictions were many and dire regarding the discontinuance of the event which put ocean racing on the nautical map of Europe. Well, those predictions were all sour. The Royal Ocean Racing Club of Great Britain, sponsor of the race, has come out flatly, and scheduled another Fastnet Race for 1935, as per previous schedule. And I have an idea that all the criticism hurled at our British cousins for their poor showing in the race in recent years may have a very stimulating effect, and that any Yankee invaders will find the going a lot tougher than they did in 1931 and 1933. That 1935 race might well be quite a party. Hope I can make it.

+ + +

I am looking forward to the coming Motor Boat Show in New York, which will be well under way by the time these lines are perused by the yachting fraternity (if they ever are). From all accounts, things are looking up "yachtingly." The prophets say the Show will be very good indeed this year — old, familiar exhibitors, who dropped out last year, are returning; new ones are coming into the fold; new and old are increasing their show space; and so on. Fine business. Vive la Motor Boat Show!

+ + +

Looking at the cruising side of yachting, there is no question but that the motor sailer is very much in the limelight, and right in the center of the stage, too. One or two designers saw the light several years ago. It wasn't a very strong light, but it has increased steadily in brilliance, and today almost all the designers are having a fling at the hybrid craft, and the yards have quite a few of them under construction. No one seems to agree as to just what constitutes a "motor sailer," or "motor ketch," or "50–50 cruiser," or whatever you want to call them. Some admit that their craft are primarily power boats, with a "steadying rig" to reduce rolling, and give them a kick ahead when there is a real breeze in the right quarter. Others claim that their craft "will really sail to windward," while still others claim their boats are equally good under sail or power. Well, where do we draw the line between an auxiliary cruiser, such as forms the bulk of the ocean racing fleet, and the motor sailer? I don't know, and maybe no one else knows, either. However, here's an idea: If a boat goes faster under sail than under power, then she's an auxiliary cruiser. If she goes faster under power than under sail, then she's a motor sailer. If you don't like that line of distinction you're quite welcome to write your own ticket. Anybody want to start an argument?

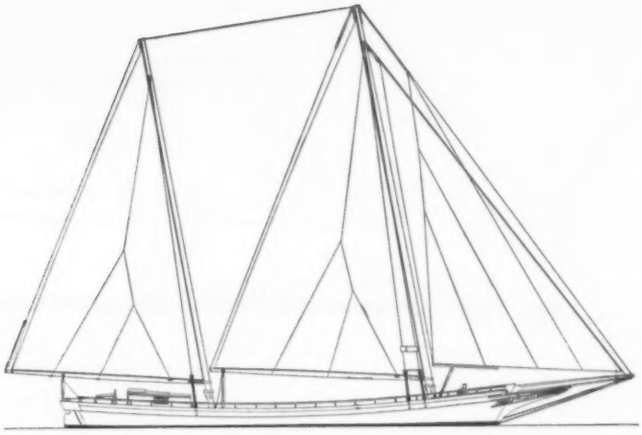
+ + +

That was a cleverly written article of Ted Conant's in the last issue, about protesting. Perhaps it is a fair expression of the general opinion along the West Coast, where Skipper Conant annexes his many winning pennants. But there is a very distinct feeling in some sections that the shoe is on the other foot, and that an aversion to protesting is responsible for the development of a number of "sharpshooters," who are continually playing hob with the rules, and getting away with it. Beginners don't bother to learn the rules — they "get away with it" because no one "calls 'em." No one upholds a sea lawyer who is always looking for a chance to protest. But the rules demand protests in certain cases. Either you protest, or let the other fellow "slip one over on you." Yes, protesting is a disagreeable business. But a little more of it would make for fairer sailing in the end. The sharpshooters would be caught and executed. The greenhorns would study the rules after being chucked out of a few races. Yes, more protesting might easily have a fine effect, what?

The Bugeye "Triumph"

By

JOHN G. EARLE



THE bugeye *Triumph* was built at Tilghmans Island, Maryland, in 1893 by Mr. John B. Harrison, who turned out a considerable number of bugeyes and log canoes. Two of the latter built quite recently are the *Jay Dee* and the *Flying Cloud*. Through the courtesy of Mr. Harrison the model of the *Triumph* was made available for the purpose of taking off the lines. The drawing shows the molded lines, that is, lines taken to the inside of the planking. The *Triumph* was constructed at a period when this type of boat had reached its highest state of development and she illustrates the best practice in bugeye building. Very few bugeyes have been built during the past twenty-five or thirty years.

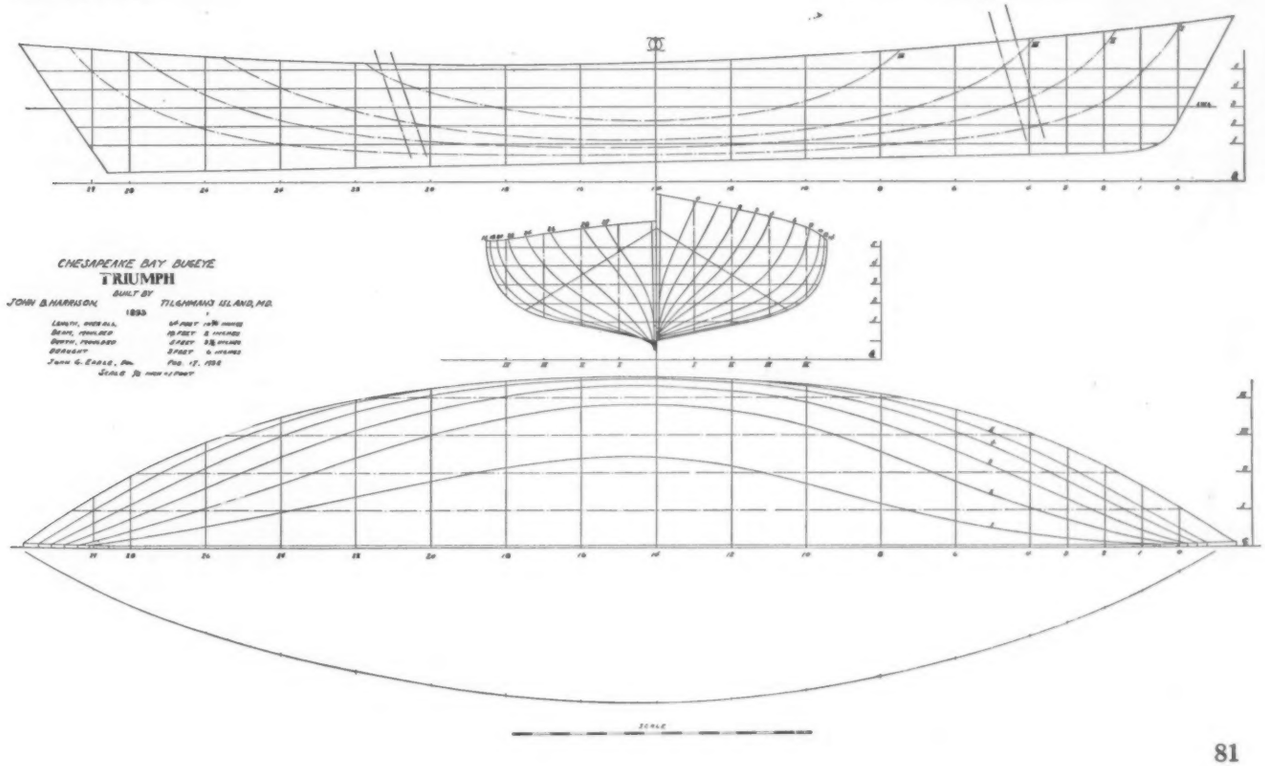
The lines show an easily driven, shoal draft, but very able model, of a type which was developed under severe conditions. Bugeyes were built primarily for the oyster business, which required them to work in exposed positions throughout the winter, and with a small crew. The snug and easily handled rig was therefore a natural development.

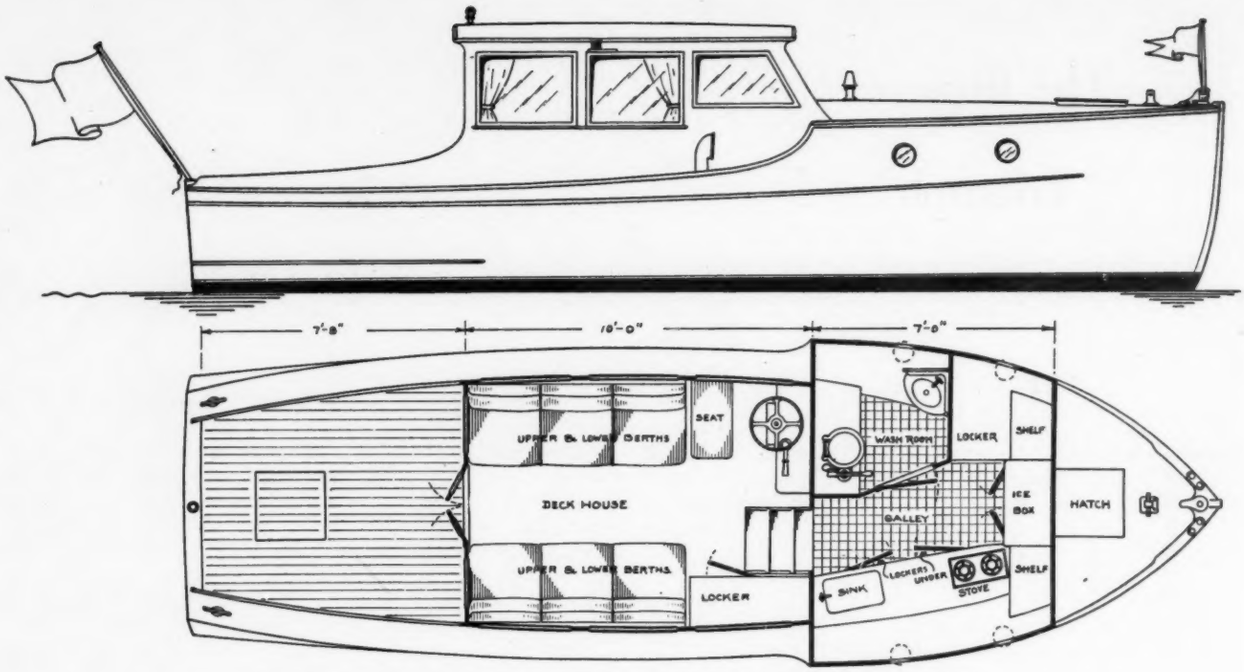
The drawing showing a sail plan for the *Triumph* was not made from measurements taken directly from the boat herself, as she was not available. It is based upon spar dimensions and certain other principal data supplied by Mr. Harrison, and the details have been added in accordance with commonly accepted practice as illustrated in a number of other bugeyes which were available for study.

One of the most prominent characteristics of the bugeye rig is the rake of the masts. It is to be noted, however, that when a casual observer looks at a bugeye and then draws his impression of the rig, he almost invariably exaggerates the rake of the masts. This is very noticeable in many of the yacht adaptations of the bugeye rig, most of which have excessive rake. The usual practice is to rake the masts from 2 inches to 2¼ inches to the foot. The later bugeyes have rather less rake than the earlier ones. The rake shown on the sail plan of the *Triumph* is 2¼ inches to the foot.

The length of the foremast is usually equal to the over all length of the vessel, except in the case of the very large bugeyes, in which a slightly shorter foremast

(*Continued on page 120*)





Outboard profile and interior accommodation plan of the 1934 Marblehead Junior

The 30-Foot Marblehead Junior

ONE of the latest and most attractive of the small stock cruisers is the Marblehead Junior, a product of the Marblehead Boat Corporation, successors to Staples, Johnson & Co., of Biddeford, Maine. As the plans above show, she is a very symmetrical craft in profile, and has proved exceptionally seaworthy in tests in heavy going off the Maine Coast. The design is very similar to that of other Marblehead cruisers, and the construction decidedly rugged.

The layout is an eye-catcher. Sleeping quarters for four people are in the enclosed deck shelter. Under the forward raised deck are found an excellent galley and large toilet room. Abaft the deck shelter is a 7-foot open cockpit for lounging, fishing, or sun bathing. Both cabin and deck shelter are fully screened, and the equipment includes ample locker space, porcelain-lined ice box, first-class plumbing fixtures, alcohol stove, etc. Either a 4- or 6-cylinder motor may be installed at the option of the buyer.

A Motor Sailer with Unusual Features

Sail plan of the Gielow-designed motor sailer

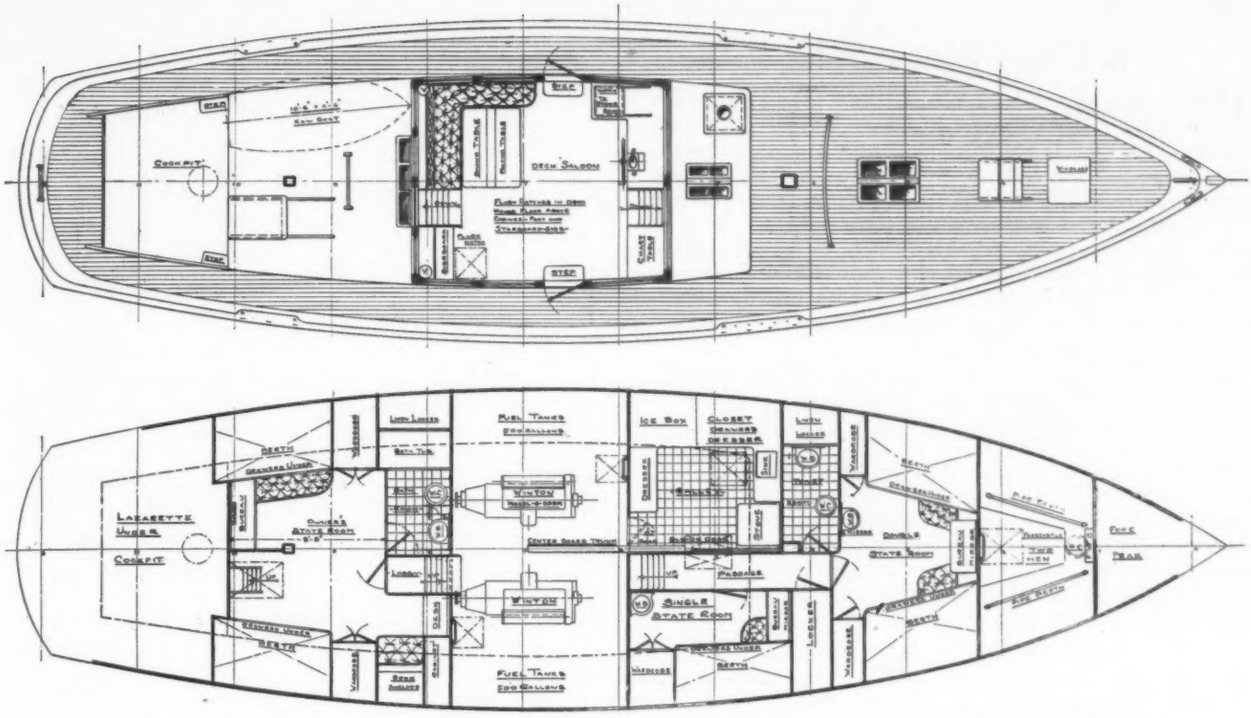
DESIGNED by Henry J. Gielow, Inc., of 25 West 43rd St., New York, for a former power boat owner who wanted a craft with good sailing qualities combined with the room and speed under power of a motor boat, the plans on this and the following page show a craft with many unusual features. Her good looks speak for themselves, her appearance being very much that of an up-to-date sailing craft. Yet she should be an excellent power boat as well. The dimensions are: l.o.a. 67′; l.w.l. 54′; extreme beam, 18′; draft, without centerboard, 5′5″; draft with board down, 10′10″.

The rig is ultra-modern in every way, and includes hollow masts, T-booms, Monel track and slides, wire running rigging, etc. Winches and gadgets are numerous.

The power plant borders on the sensational. It consists of a pair of the new Winton Model 6–208–M Diesel motors, built on the 2-cycle principle, and said to be decidedly efficient and economical. They will drive Hyde feathering wheels on Monel shafts.

The deck and cabin plans give an excellent idea of the spaciousness and comfort on deck, in the deck house, and in the quarters below decks. Decks are of white pine, and deck structures of teak. Below decks the finish is white and mahogany. The equipment includes a Shipmate fuel oil stove, stainless steel tanks, Wilco blower ventilation, and Exide batteries.

The plans reproduced in this section are the property of the designers under whose names they appear. Further information concerning any design should be addressed direct to the naval architect in question.

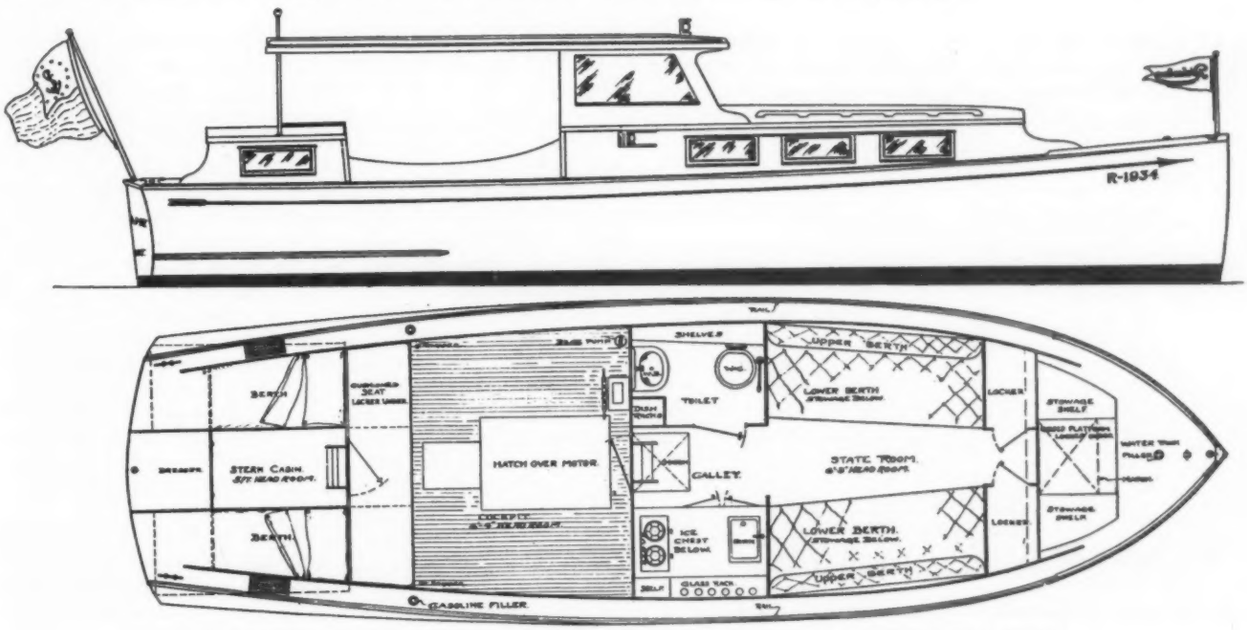


Deck and cabin plan of the 67-foot motor sailer designed by H. J. Gielow, Inc., equipped with Winton-Diesel motors

The 1934 Richardson Cruisabouts

THE 1934 fleet of Richardson Cruisabouts and Little Giants, built by the Richardson Boat Co., of North Tonowanda, N. Y., far surpasses any fleet offered previously by this well-known concern. The 32-foot Cruisabouts are offered in a variety of deck and cabin arrangements, as are the 24-foot Little Giants. The plans below show the 32-foot Cruisabout laid out with both forward and after cabin, with cockpit between. The forward cabin has two upper and two lower berths, galley, toilet room, lockers and other storage space. The after cabin has two more berths, dresser, lockers, etc.

The power plant is a Gray 6–75 marine motor, which gives a cruising speed of 14 to 15 miles an hour. Other models, which include the Single Cabin Cruisabout, may be equipped with V-drive. The motor compartment is sound-insulated, ventilated, and entirely bulkheaded off from the cabin. The other dimensions of the 32-footer are: beam, 9′ 6″; draft, 2′ 6″.



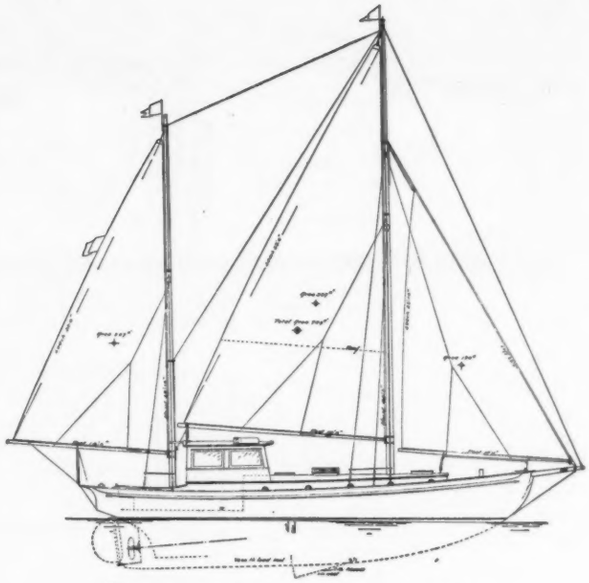
Outboard profile and cabin plan of the 32-foot Double Cabin Richardson Cruisabout, 1934 Model

A Casey Motor Sailer

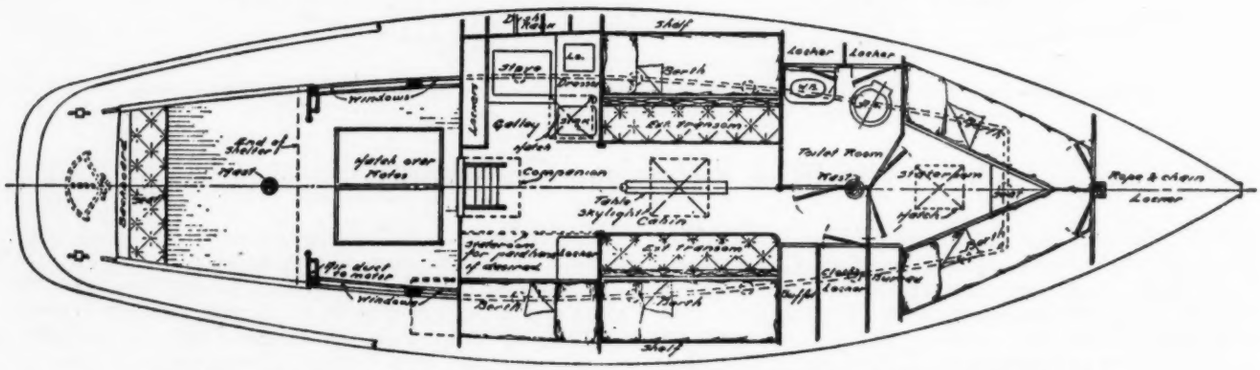
THE design shown here is what the Casey Boatbuilding Co., of Fairhaven, Mass., believe is a real motor sailer. Developed from a successful sailing design, she is expected not only to sail unusually well in open water in a good breeze, but to make excellent weather of it in hard going under power. The snug ketch rig is ample for good speed in any kind of a breeze, and a 40-h.p. heavy duty Palmer motor should kick her along between 9 and 10 knots when the wind fails. The dimensions are: l.o.a. 42′; l.w.l. 35′ 4″; beam, 12′ 6″; draft, 4′ 6″; sail area, 750 sq. ft.

The small centerboard houses entirely within the keel, and there is 7500 pounds of outside lead for stability. A feathering wheel reduces the drag to a minimum when under sail.

Below decks we find a double stateroom forward, followed by a toilet room to port and lockers and buffets opposite. Then comes the main cabin, with two built-in berths and two extension transoms, lockers, etc. The galley is located abreast the companion steps to port, and there is an extra berth opposite. The permanent deck shelter should be a great comfort in bad weather.



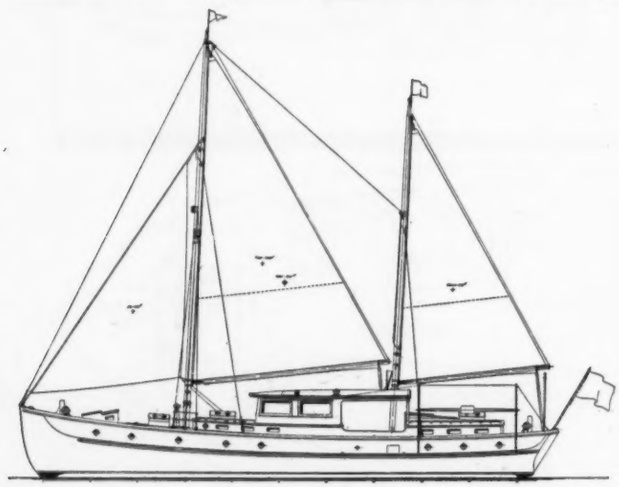
Sail plan of Casey's 42-foot motor sailer



The spacious interior accommodation plan of the 42-foot motor sailer designed by the Casey Boatbuilding Co.

"Bluebill," One of Hand's Latest Motor Sailers

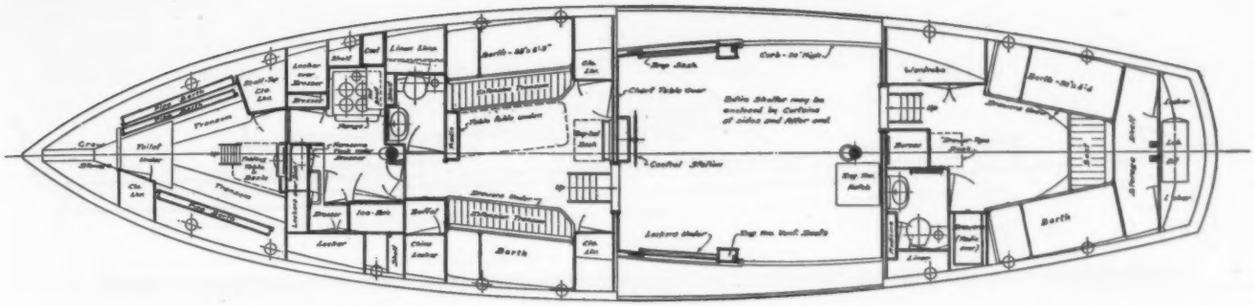
A FEW years ago Mr. John C. Spring, of Boston, was the proud owner of a Hand-designed motor sailer named *Bluebill*. Good as she was, she was a bit too small. So Mr. Spring commissioned Mr. Hand to design him a new and larger *Bluebill*, with the same make of power plant, and the result is the 60-footer whose plans appear on this and the following page. She is similar in type to many other craft from the board of the same designer, with beam of 14 feet 10 inches, draft of 5 feet, and a ketch rig of sufficient area for good speed in a decent breeze and fine steadying qualities when under power in bad seas. She was launched last spring from the yard of her Maine builders, has cruised along the Maine coast all summer, and is now on a winter cruise in Florida waters.



Sail plan of "Bluebill"

The design is of the rugged, seagoing type, capable of taking whatever comes in the way of weather, and giving a maximum of comfort to owners and guests. She has ship-type frame, heavy pine planking, and teak decks and deck structures. The equipment is distinctly modern and complete, and includes such items as electric blower ventilation, Lux fire extinguishing system, General Electric radios and inter-communicating telephone system, vacuum clutch control, etc.

The power plant is a Hall-Scott Explorer 3: 1 reduction gear motor driving a 36″ by 34″ Hyde propeller. At a cruising speed of 10 knots the fuel consumption is unusually low, despite the 40 tons displacement, and a considerably higher speed is available when occasion



Cabin plan of the Hand-designed motor sailer "Bluebill," equipped with a Hall-Scott Explorer motor

requires. Fuel tankage gives a cruising radius of over 1000 miles, and there is ample fresh water tankage.

The owner's spacious quarters are in the after cabin, with two fine berths, toilet room, wardrobe closet, bureau, lockers, etc., and two hot water heaters. Four guests may be accommodated in the forward cabin, which has two fixed berths and two extension transoms, hot water heaters, unusual locker, drawer, and other stowage space, and toilet room adjoining. The athwartships galley, in way of the mainmast, is unusually large and well equipped with all modern appliances. A crew of three is nicely taken care of in the forecastle.

+ + +

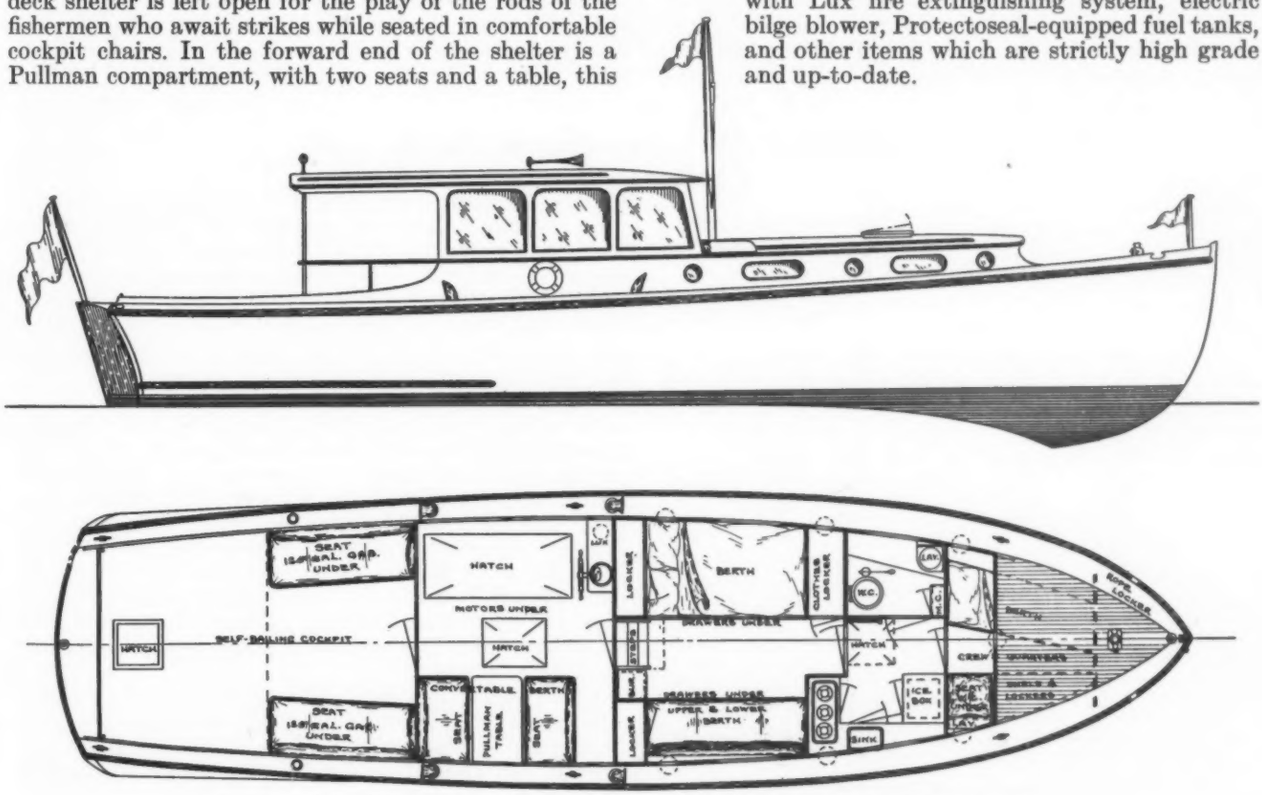
The New 46-Foot Co-Mac Seacraft

IN THE October number we published an announcement of the formation of the Co-Mac Seacraft Company, succeeding the Cohrone Boat Co., of Arverne, N. Y. Now we have the pleasure of reproducing the design of the first of several Co-Mac Seacraft — a 46-footer with 12 feet beam and draft of 6 feet 3 inches, which Mr. Mackerer, the designer, terms an "offshore fisherman."

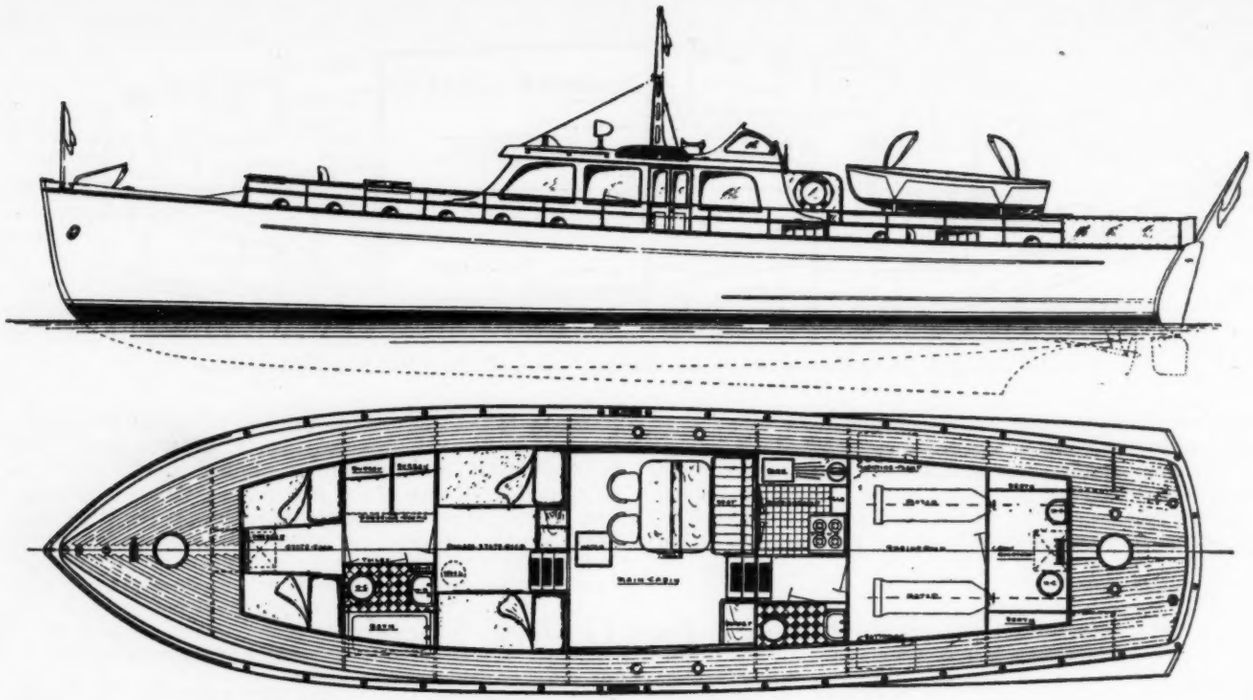
This husky craft was designed for rugged work in open water, and laid out for a small party of fishermen to do extended cruising and fishing. The after end of the deck shelter is left open for the play of the rods of the fishermen who await strikes while seated in comfortable cockpit chairs. In the forward end of the shelter is a Pullman compartment, with two seats and a table, this nook being easily convertible into a comfortable berth.

Below decks we find in the main cabin a large double berth on the port side and an upper and lower berth opposite, with spacious hanging lockers adjoining. Next forward are the toilet room and galley, while the forecastle is laid out to accommodate a paid hand, with second toilet, shelves, locker, etc.

A speed of between 14 and 20 miles an hour may be attained, according to how powerful a motor is installed, the buyer having a choice of several. As are all Co-Mac Seacraft cruisers, this 46-footer is equipped with Lux fire extinguishing system, electric bilge blower, Protectoseal-equipped fuel tanks, and other items which are strictly high grade and up-to-date.



Outboard profile and cabin plan of the new 46-foot Co-Mac Seacraft, designed as a fishing cruiser



Outboard profile and cabin plan of the Hacker-designed 57-footer, powered with twin Sterling motors

A Husky Twin Screw Hacker Cruiser

ABOVE are the plans of a rugged cruiser of the seagoing type which John L. Hacker, veteran naval architect of Mount Clemens, Michigan, has designed for a Canadian yachtsman. While there is nothing startling in hull design which strikes the eye when these plans are studied, one is immediately impressed with the unusual interior layout. The crew's quarters are aft, instead of forward. The twin 150 h.p. Sterling motors are next forward — much farther aft than in the average boat. Next forward are the galley and a toilet room. Then comes the spacious deck house. The forward part of the boat is taken up by the owner's quarters, consisting of two double staterooms, toilet room, lockers, and other stowage space.

The design and construction of this 57-footer are up to the well-known Hacker standards in every respect. All interior details have been carefully worked out, and all space utilized. She has a cruising speed of 13 to 14 miles.

Another Attractive Motor Ketch

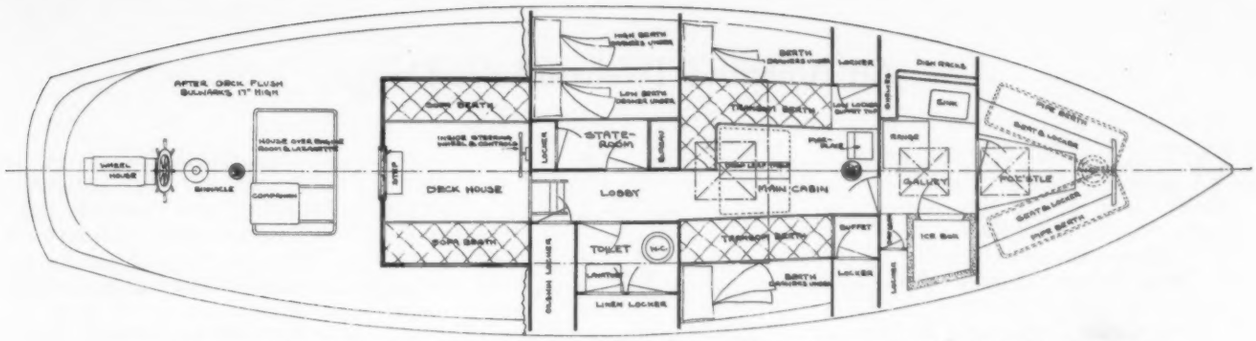
Sail plan of the Alden-designed motor ketch

THE American yachting public seems to have become decidedly "motor sailer conscious," judging by the amount of space devoted to this type of craft in recent issues of YACHTING. To the numerous and varying designs which have been published in the last few months we now add that of an attractive "motor ketch" from the board of John G. Alden, which is of the following dimensions: l.o.a. 52′ 6″; l.w.l. 44′ 9″; beam, 14′ 6″; draft, 3′ 9″; sail area, 1030 sq. ft.

As might well be expected of any boat from this designer's board, this craft is meant to do some real sailing — hull, spars and rig all point to this fact. At the same time, the "power boat" aspect has been carefully considered, so that she will travel a long ways, and reasonably fast, in easy or hard going, when her 125 h.p. Buda Diesel is put to work. The main motor, electric generator, fuel tanks, etc., are all placed in one compartment aft, shut off from the rest of the boat. There is good headroom here, and plenty of elbow room to do any work required.

The designer has the following comments to make: "For this type of boat the ketch rig automatically selects itself, keeping the body of the boat clear of spars and rigging, and permitting the proper location of the deck house and a larger motor.

"She has an unusual amount of deck room, while the



Interior accommodation plan of the 52-foot motor ketch designed by Alden, and powered with a Buda Diesel motor

deck house affords bad weather shelter with a view all around. Two steering positions are provided to avoid the difficulties of trying to sail the boat properly from the deck house wheel. The interior arrangement gives generous accommodations for four persons, with two extra berths available." The deck house berths are invaluable.

A Fine Cruising Yawl With Moderate Draft

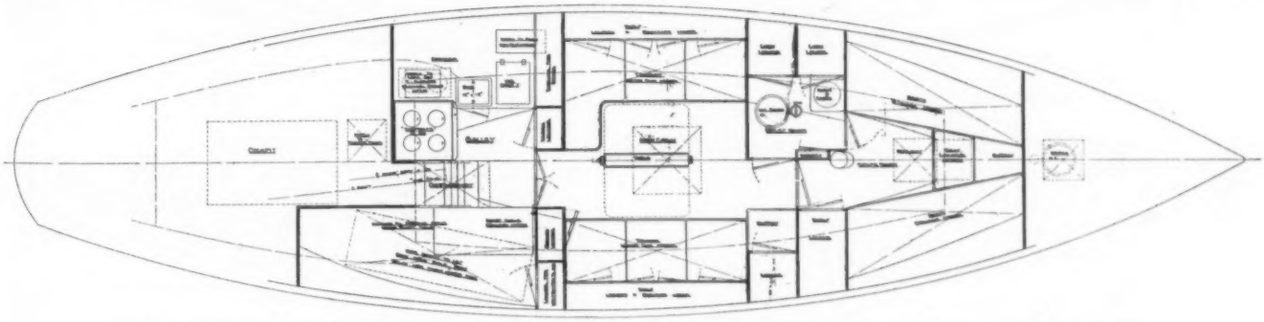
DESPITE the upset condition of the world in general, interest in yachting affairs continues on the upgrade in all departments. While new boats are not appearing as fast as they did a few years ago, there are enough to prove that this end of the game is holding its head up very well indeed. One of the attractive newcomers will be the jib-headed cruising yawl whose plans appear on this page. She was designed by Sparkman & Stephens, of 11 East 44th Street, New York, for a Narragansett Bay yachtsman, and is an up-to-the-minute craft in hull, rig, construction and equipment. Following are her dimensions: l.o.a. 43′ 5″; l.w.l. 30′; beam, 11′ 4″; draft, 4′ 4″ without centerboard; sail area, four lowers, 840 sq. ft.

This welcome addition to the New England cruising fleet will slide down the ways at Lemos Brothers yard in Riverside, Rhode Island, late in the spring, and will be in full commission early in the season. She is of the "composite" type, with centerboard working through a slot in the lead keel and completely housed within it. Construction and equipment will be of a high type, and includes such items as bronze fastenings and hardware, Philippine mahogany planking, stainless steel rigging, Merriman turnbuckles, Sands plumbing, Shipmate coal stove, etc. The auxiliary plant is a Gray 4–20, V-drive, with reduction gear, which will kick her along plenty fast enough in calms, the owner being one of those yachtsmen who prefer to sail when there is any wind at all.

Sail plan of the 43-foot cruising yawl

The designers have been especially active in turning out efficient yawl rigs on auxiliaries, and this one is no exception. It is well-proportioned, the hollow spars and rigging plan have been carefully designed to be as light as consistent with strength and efficiency, and with as little windage as possible.

The interior arrangement plan, while not exactly novel, has some interesting features, and represents the owner's ideas of a layout for his personal use in a craft of this size and type. The galley is aft, on the port side, with a berth and lockers opposite. The main cabin is amidships, there is a fine double stateroom forward, and toilet room and lockers, buffet, etc., between. All available space has been used for lockers, and stowage space.

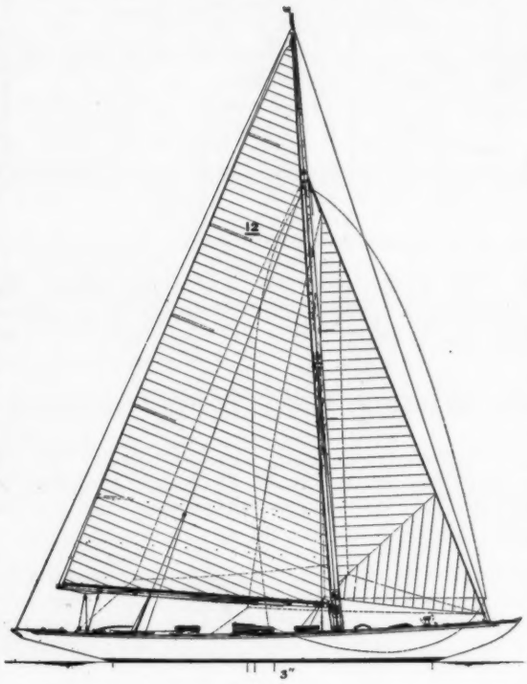


Interior accommodation plan of the 43-foot yawl designed by Sparkman & Stephens for a Narragansett Bay yachtsman

An American Twelve-Metre Design

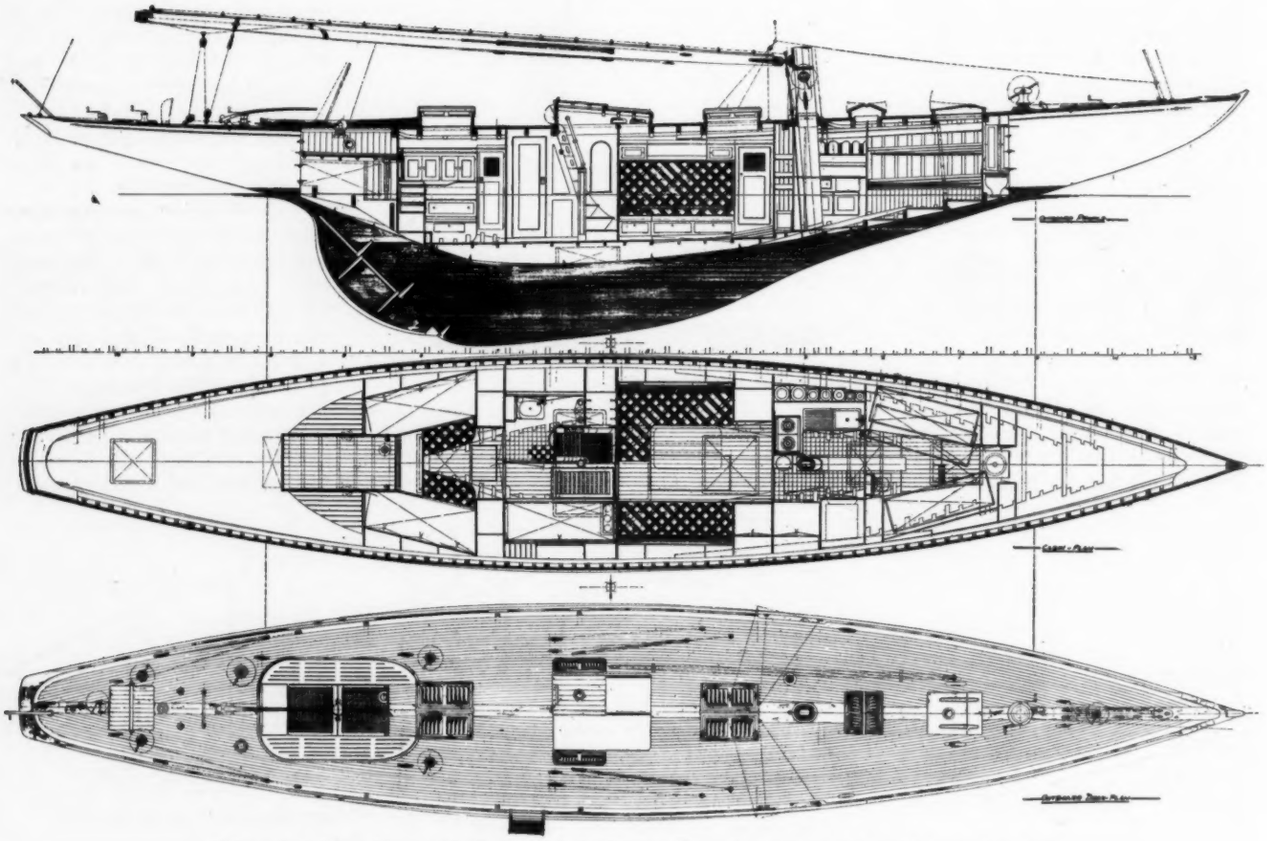
WITH the newly-developed interest in the Twelve-Metre Class, due to the challenge received recently for an international match to be sailed in Long Island Sound this summer, the design of a Twelve-Metre boat on this page should be of unusual interest to racing men. She is from the board of Megargel & Gruber, now associated with Burgess & Donaldson at 307 East 44th Street, New York, and the following are her principal dimensions: l.o.a. 69′ 3″; l.w.l. 43′ 3″; beam, 12′ 3″; draft, 8′ 7″; sail area, 1950 square feet.

While the hull seems to be quite normal in size and appearance, the rig attracts attention because of the single, high-cut headsail, which the designers believe should be decidedly efficient in windward work. Winches for adjusting the fore and aft position of the masthead through an adjustment of the permanent backstay are located below decks, but operated from deck. There are plenty of winches and hatches for the handling of light sails.



Sail plan

The arrangement below decks includes a forecastle for three or four paid hands, with toilet, wash basin, lockers, etc., followed by a well-arranged galley. The main cabin has two transoms which make up into comfortable bunks, good lockers, and a buffet. On the starboard side of the lobby is a fine chart table, which may be used as a bunk at night, while opposite is a completely equipped toilet and wash room. Farthest aft is a good double stateroom. A large oilskin locker is located at the foot of the companion ladder. Lazarette and forepeak give excellent storage space for sails and other racing gear.



Inboard profile, cabin and deck plans of the Twelve-Metre designed by Megargel & Gruber, Inc.

Books for the Yachtsman

Shark! Shark!

By Captain William E. Young

As told to Horace S. Mazet

(Gotham House, New York, $4.00)

THE same magnificent vitality and robust enjoyment with which the author has hunted down sharks in the seven seas, animates this odyssey of his thirty-year-long career — with results that are eminently readable.

One of a considerable family of a "Bluenoser" and a Maine woman who met and wed in California, Captain Young came naturally by the desire to extend his horizons beyond his native San Diego. How, as a boy, together with his older brother Herbert, an expert deep-sea diver, he set about doing this and in the course of his progress met his first shark "the dragon of seagoing legend" and with what effect on his impressionable mind, gets the story off to a flying start. Henceforth, come what might — running their own little schooner north with contraband guano, sailing before the mast on a lumber boat, entertaining fishing parties at Catalina Island, or taking a hand in Young Brothers concern in Hawaii, the idea of shark hunting was never absent from his thought. "The savage armored seatigers had become my fetish, my totem."

For in the fulness of time, at Honolulu, whither the two brothers had migrated, they built up a prosperous harbor business. Here, with shark fishing as a casual side-line to attract visitors, they began to suspect that there might be real profit in going after the animals seriously. But it was purely for the satisfaction of exterminating them and his love of the sport that Captain Young pursued his strange career for the next twenty years among the islands where he became known as the supreme *kane mano* (shark killer).

Nor did his prowess ever fall short of the excellence implicit in this appellation. In the desire to realize his hopes that shark hunting might evolve into a gainful occupation, it was inevitable that he should enter into the commercial and industrial phases of the work. In so doing, he established and directed stations all over the world for both American and European syndicates. Now netting 10,000 pounds of shark in one day, as he did with a friend off Nantucket; now working hand in hand with natives in French Somaliland, in Australia, in the Virgin Islands, the Captain took all sharks gustily in his stride, or perhaps we should say, his nets.

Business flourished. As the world awoke to a desire for the various products obtainable from the animal's hide, liver, teeth, flesh, and carcass which once had asked, *via* China, only the fins, Captain Young's services were ever in demand.

"A dead shark is the only good shark," he says, and from his illustrations, both verbal and photographic, of the brute's not infrequent human prey, one must agree. More than one incident is related, with corroborating testimony, of the deadly attacks on man of the killers of the sea. Other sea beasts scarcely less gentle who snap and battle through the Captain's pages are barracudas, giant devilfish, swordfish, and sawfish. These are in sharp contrast to the young seal that would go for his daily bath over the side of his masters' ship, returning as surely as a docile puppy; and "Pelorus Jack," the famous porpoise who, for his skilful work as a self-appointed pilot in Wellington Harbor, New Zealand, was protected throughout his lifetime by legislative enactment.

With his unparalleled knowledge of the shark, the author takes pleasure in exploding many long-accepted theories about him for the benefit of the less well-informed. But he makes up for the loss of these ideas by the introduction of authentic myths from South Sea folklore, in which the great fish is propitiated as a deity, albeit an evil one.

"In every sea beyond the reach of the keenest eye are millions of sharks. — In every bit of the ocean. Off Coney Island, under Greenland's ice fields, up brackish river mouths are hungry sharks, but they are seldom seen — and luckily most of them are harmless to us." To enumerate all the species and related forms of this ubiquitous creature were futile here. But Captain Young has done it fully with adequate sketches and descriptions.

To those who would adventuring go to learn the truth about this decidedly engrossing subject, "Shark! Shark!" is recommended as the perfect way. They will find Captain Young not only a superb *kane mano* but an instructor and entertainer of parts as well.

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Little Ship Wanderings

By J. B. Kirkpatrick

(Edward Arnold & Company, London, $3.00)

HERE is a tale of little ship cruises which, as the name implies, depends not on any outstanding dramatic struggle with the sea for its interest but rather on the thousand and one homely experiences common to all small-craft yachtsmen in the finding, fitting out, and sailing of their boats from season to season. Whether writing of his early misadventures in *Shark*, a converted ship's lifeboat, or of racing across the Atlantic in *Maitenes II*, Mr. Kirkpatrick is never less than interesting and at times highly enlightening in regard to various problems of comfort within and efficiency without that confront every small ship owner.

Betwixt and between *Shark* and *Maitenes* came *Mermaid*, the six-ton yawl, a quondam navy cutter in which the author and his friends cruised the Essex rivers, the Thames Estuary, and short distances roundabout; *Thelma*, something of a Falmouth Quay punt, and *Looe Drifter* in which Mr. Kirkpatrick made his first single-handed passage and in the company of friends visited the Devon and Cornish coasts; and then *Ariel*, a 26-footer that meant an excursion to Spain where her crew made leisurely and happy exploration of coasts little known at that time to British yachtsmen. *Zeehond*, a 30-foot sloop of American design, chine-built, was of a later day.

Mr. Kirkpatrick's first taste of ocean racing was taken over the difficult Fastnet course on a friend's ship, a cutter of 19 tons, "straight-keeled and narrow-gutted with a long counter, a big open cockpit, and no freeboard." In this undertaking, a casual competitive spirit and even more casual preparation on the part of the English yachts participating — perhaps because ocean racing for small boats was then a new idea and therefore unfashionable — allowed the cup to be carried off by the more wide-awake American schooner *Nina*.

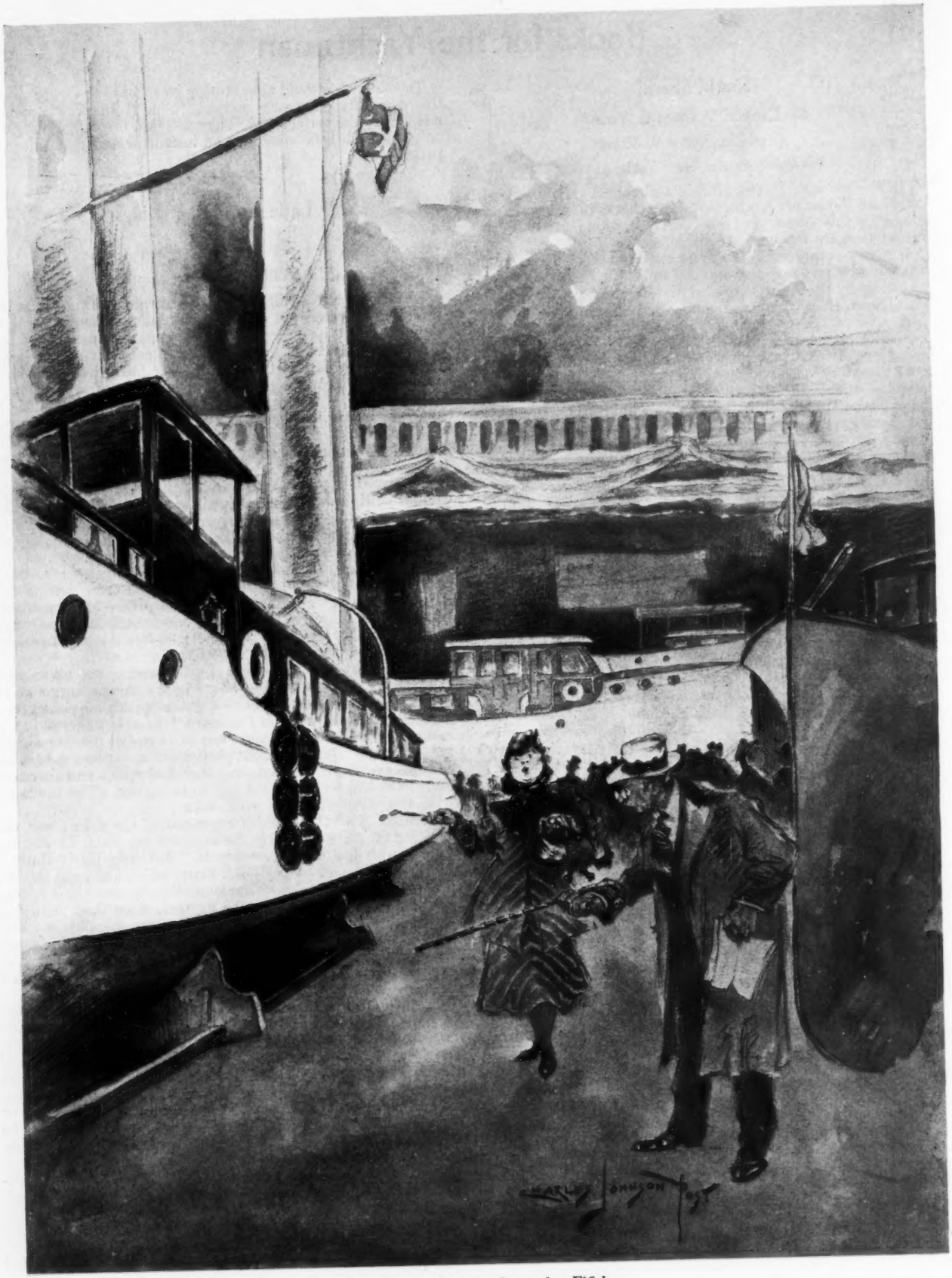
But one good thing which came out of the defeat was the building of *Maitenes II* by the author's associate, Lieutenant Luard, who has told her story in "A Celtic Hurly-Burly." *Maitenes* of the audaciously tall mast, which had been the object of much good-natured condemnation by arm-chair critics, finished fourth that year in the Fastnet, more than justifying herself thereby in a race from which three so-called sturdier yachts had been compelled to drop out. Mr. Kirkpatrick's narrative of her second season's venture in the longest and hardest Fastnet race ever sailed gives a graphic picture of how, with a sloop rig, she managed to cross the line in second place.

Both to *Maitenes* and her defenders, these experiences served as profitable preliminaries to participation in a Transatlantic race from Newport, Rhode Island, to Plymouth Breakwater. Along with nine other yachts offering as many variations of design and rig as could be found between 45 and 72 feet, the Bermudian helped compose the finest ocean racing fleet ever assembled. That the adventure proved an exciting, if more or less uneventful one (as told by the modest author), need not be questioned by anybody who has even dreamed of crossing those 3000 miles of turbulent water.

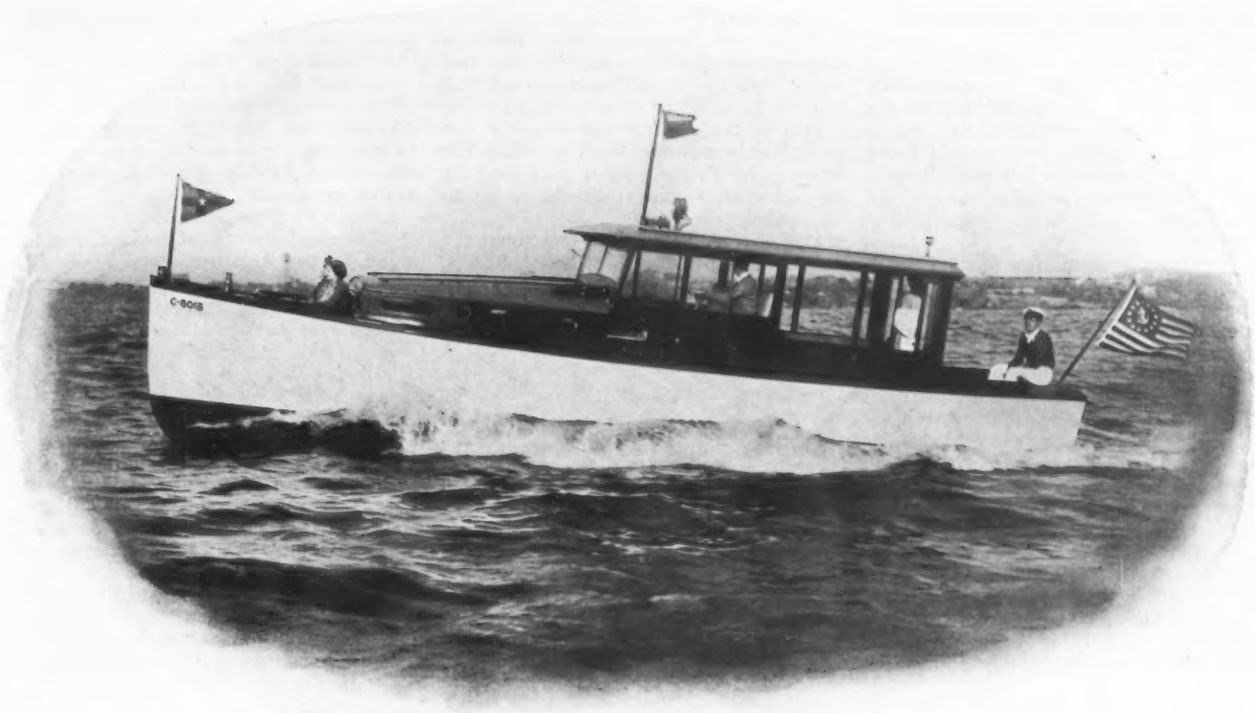
But never once do the quiet moments spent by Mr. Kirkpatrick in wandering through the inland waters of Holland, Belgium, and France and among the Channel Islands and other waterways of his native England suffer by contrast with the scenes of perilous activity on the deep sea.

Through it all, his sense of humor and sincere spirit, coupled with his demonstrated understanding of good seamanship, combine to weave a story of certain appeal to all those whose hobby is the small boat.

M. TODAHL



"No, George—No! You know that Fifi here could never climb that ridiculous ladder"



The 1934 Elco Cruisette, 35 feet long, shows many new refinements. She will step along at 16 miles' speed with an Elco-Buda engine

At the Motor Boat Show

The Elco Fleet

FOR 1934 The Elco Works, of Bayonne, N. J., offer ten complete standardized cruisers, ranging in size from the Marinette 24-footer to the 50-foot twin screw motor yacht. All but two of these craft are being exhibited at the Show, the Elco space being augmented, as usual, by throwing open Port Elco, adjoining, and making it an integral part of the Show.

Following is the complete Elco line for 1934: 24-foot Marinette, 28-foot Veedette, 31-foot Veedette, 32-foot Cruisette, 35-foot Cruisette, 38-foot Cruisette, 38-foot Cruiser, 42-foot Motor Yacht, 50-foot Motor Yacht.

Elco designers and engineers have incorporated many distinctive features and refinements in the 1934 models which serve to improve the safety, seaworthiness and operating costs, as well as add materially to the comforts and conveniences of the boats. Naturally, the Elco deck cabin, steering seats, and forward cockpit, which were introduced by Elco a few years ago, have been continued, all having become distinctly popular.

Motors of various sizes, and either single or twin screw, are offered in almost all Elco models. Up to the 38-foot boats, motors are of the Elco-Buda type. The larger yachts are powered with the well-known Elco engine, which has been used successfully for seven years.

For a number of years Elco has followed the policy of including a complete list of boat equipment at the regular stock prices, and is continuing this policy for 1934. This is in accordance with regular automobile practice, and saves the buyer the annoyance and cost of buying a big list of accessories and equipment.

The Elco 24-foot Marinette is a "big little boat," sleeping four people in the deck cabin, with forward cockpit and 45–50 h.p. motor giving a speed of 13–15 m.p.h. The 28-foot Veedette is a new model, with deck cabin and newly-designed forward cabin, so that six people may be accommodated. If a sport fishing model is desired, this model may also be had without the deck cabin, leaving an unobstructed cockpit of unusual length. She does 12–14 m.p.h. with a 45–50 h.p. motor, but will do up to 22 m.p.h. if more power is installed.

The 31-foot Veedette has been designed for the man who wants a fast boat with plenty of cockpit space. She has a forward cockpit, four-bunk cabin, and spacious stern cockpit. A speed of 18–20 m.p.h. is obtained with an 80–90 h.p. motor.

The three Cruisettes, the 33- and 38-foot cruisers, and the 42- and 50-foot motor yachts, round out a complete line which will stand critical inspection. Elco Cruisers are so well known as to need little description, except to remind yachtsmen that Elco has long been one of the leaders in stock boat construction and is constantly making improvements and innovations which are sure to appeal to discriminating yachtsmen looking for the best.

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The Matthews Cruisers and a Stock Auxiliary Sloop

NOT since 1929 has Matthews come to the Show with such an elaborate display as this year. Newer refinements, greater comforts and a host of new items of equipment have been built into the same husky, broad-beamed Matthews hulls.

Four Matthews boats are displayed this year, three of them 38-footers. There is the "38" Twin Cabin, one of the most popular of the whole Matthews line, with two 6–80 Kermath engines and twin rudders. This model sleeps seven. Then comes the "38" Sport Cruiser which has been a favorite with amateur fishermen for many years. She is powered with a 180 h.p. Sterling Petrel engine. The latest "38" Double Cabin Enclosed Bridge model with two 6–80 Kermath engines providing the power, is also at the Show. This model features an extra large deckhouse and has the galley located forward of the bridge.

One of the surprises of the Show is the new Matthews "Sailer," a 25-foot single-handed auxiliary cruising sloop which has

been in the process of development for a period of about two years.

Her over all length is 25 feet, 7 inches, with a water line length of exactly 22 feet. Her draft is only 2 feet, 4 inches, but she has ample bearing and should stand up to it. With her light draft she should prove popular on Great South Bay and Biscayne Bay and other shoal bodies of water where a light draft boat is the only one sailing at low tide.

A generous beam of 8 feet 6 inches makes for good stability and also provides plenty of elbow room in the cabin. The interior arrangement provides a large double bed up forward extending under the deck with a full-length seat berth on the port side, followed by an enclosed toilet room. Located under a seat on the starboard side is a large, built-in ice box extending under the deck. Then follows a sink with lockers below, a two-burner stove and a large hanging locker.

The headroom of 5 feet 8½ inches obtained in the companionway is remarkable for this size of boat. The large self-bailing cockpit has a 6-foot seat on each side, furnished with soft, waterproof cushions, which, incidentally, form another bed when brought into the cabin and placed on the floor. The auxiliary engine is installed under the cockpit floor, with two different engines available — the one cylinder 6 h.p. Falcon and the new 12 h.p. Gray.

One of the noticeable features of the cockpit is a gallows frame in which the boom rests. This also serves as a form for spreading an awning over the boom to cover the entire cockpit.

One of the outstanding facts about the entire line of 1934 Matthews' "38"s, "46"s and "50"s — nineteen models in all — is that all but two models will have twin screw power with twin rudders as standard equipment.

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Outboard and Family Runabouts

OUTBOARD racing hulls and inboard runabouts of various makes are exhibited by Armstrong and Galbraith, Inc., New York.

Several Century models are shown, including the Century A, which established such a fine racing record during the past two years, and the Century Sea Maid, an inboard model. In addition to these two boats, three other Century models are on hand: the Scamp, the Black Demon and the Waltonian.

Two new Lyman family boats and one 8-foot rowing dink by the same firm are also exhibited. One of the family boats is 13 feet long by 56 inches beam, and the other is 15 feet by 5 feet beam. Both models are decked.

Several Thompson models, the product of this well-known boat builder, will be found at the Armstrong and Galbraith booth, as well as a line of motor boat fittings and accessories.

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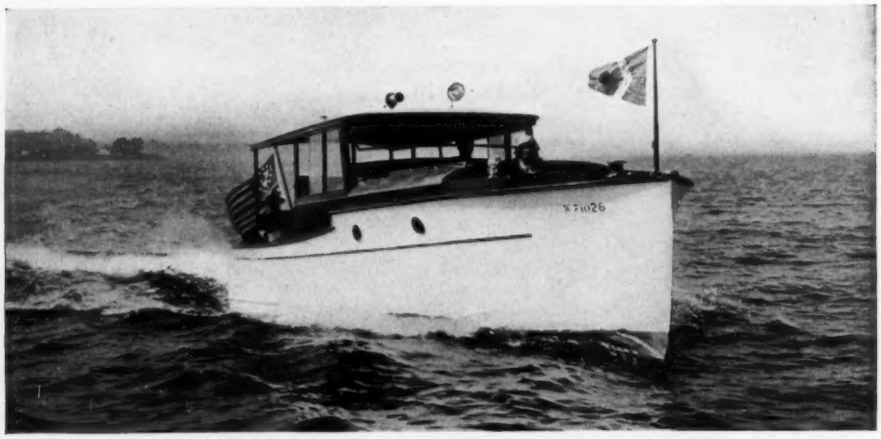
A Consolidated Cruiser and Speedway Motors

THE Consolidated Shipbuilding Corporation, Morris Heights, New York City, is again exhibiting, in space A-3, on the main floor, one of its finely finished 47-foot DeLuxe two-cabin cruisers. Also on this floor is to be found a 300 h.p. Speedway Diesel engine, while on the mezzanine floor a line of Speedway gasoline motors, 25 to 300 h.p., is on display. This is the twenty-ninth consecutive year



The Elco Veedette, a beautiful 31-footer which slips along at 18 to 20 miles per hour

Comfort plus seaworthiness in this Matthews 38-foot double cabin cruiser. Two Kermaths drive her from 14 to 15 m.p.h.

that Consolidated, and its parent organization, the Gas Engine and Power Company, has been an exhibitor.

Owing to the restricted space and the hazard of moving large boats to the Grand Central Palace through New York City's congested streets, Consolidated's larger craft cannot be exhibited. Of necessity, therefore, they can only show examples of their artistry in boat building by sending to the Show, each year, runabouts, play boats or small cruisers.

This year, the 47-footer is one of the outstanding cruisers at the Show, as well as one of the largest. Arranged with a large, partly enclosed bridge deck amidships, over the engine room with its 180 h.p. Speedway motor, there is a well laid out sleeping cabin forward, with toilet room opening from it, while aft is a spacious and attractively furnished living room or lounge, with a galley and another toilet room at the forward end. This room can also be converted into a sleeping cabin, as it has two Pullman berths and plenty of hanging and locker space.

There is also a large and roomy after cockpit, not covered, which makes an ideal lounging space for those who do not like to shut out the sun, or from which to fish. The speed, with the power equipment mentioned, is 20 m.p.h. The whole outfit shows Consolidated's skill in combining grace, speed and enduring utility in a moderate sized cruiser.

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Some Sailing Skiffs and a Dory

AN EXHIBITOR from New England who offers something new in skiffs and small boats is A. R. True, Amesbury, Mass., builder of power boats, tenders and the famous Swampscott dories. Three models of the True line are seen at the Show, a 16-foot club sailing skiff being the main feature. The other two models are a 12-foot rowing skiff and a 12-foot Morse Banks Dory.

The 16-footer is a new model embracing several new features intended to add to the speed of the boat under sail. This centerboard sailing skiff has a generous beam of 5½ feet on top, but is only 17 inches wide on the bottom. She is thus something of a modified dory type. The depth is 23 inches. This boat is ruggedly built and well fitted, with a modern Marconi sloop rig. There are five strakes on each side, the planking being of ⅝-inch pine, and the bottom of ⅞-inch.

The two rowing boats are excellent little boats of their kind.

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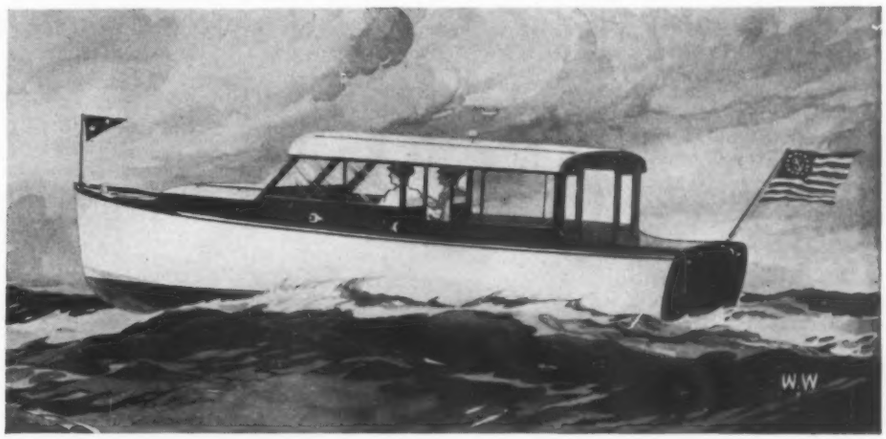
A Stearns Marine Co. Knockabout

ONE of the small sail boats which is attracting a lot of favorable attention is the 16-foot Marconi-rigged sloop exhibited by the Stearns Marine Co., of 40 Broad St., Boston, Mass. She is a smart-looking little craft, for day sailing or racing, with large, comfortable cockpit, and is decked over forward. Based on last year's successful sloop, the new model has a bit more beam and a bit more sail, and after exhaustive tests made last summer, is a distinctly faster and better all-round boat. Some ingenious devices are incorporated, at slight additional cost, so that she can quickly be converted into an auxiliary cruiser. The price is decidedly moderate.

A new Veedette by Elco is this 28-footer. She shows speeds up to 22 miles per hour



Beauty of line and attractive interior fittings make this Consolidated 47-foot cruiser one of the high lights of the Show

Two New a.c.f. Models

THE 1934 a.c.f. fleet offers to the yachtsman twenty different models, ranging in size from 24 to 68 feet in length. Two new models have been added to this famous fleet and they constitute one of the most interesting exhibits on the main floor of the Palace.

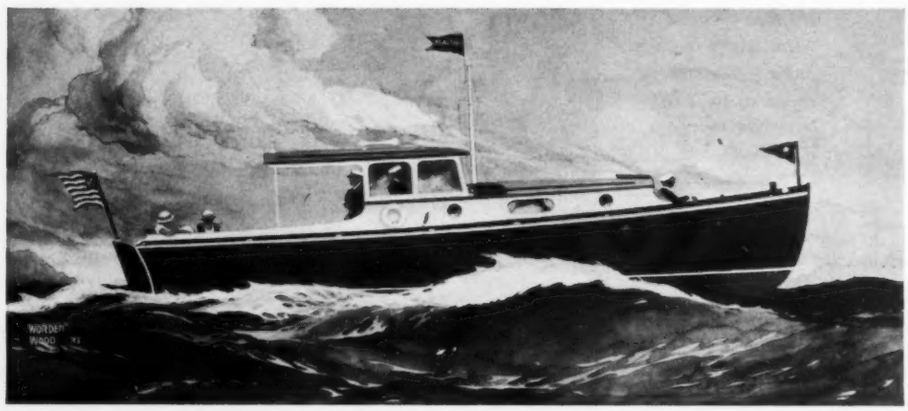
The newly-designed 36-foot twin screw cruiser is powered with a pair of direct-connected 85 h.p. Chrysler motors which give her plenty of speed and maneuverability. The layout, from the bow aft, includes a forepeak locker under the large forward cockpit, a comfortable and spacious main cabin with four large berths, a complete galley and toilet room. Two full-length clothes lockers, a dresser, and ample shelf space are provided in the main cabin. Galley equipment includes a three-burner alcohol stove, a large deck-filling ice box, and a conveniently-located sink.

The deckhouse on the 36-footer, which is entirely glassed- and screened-in, provides sleeping accommodations for two more people. During the day the berths make comfortable couches and the deckhouse becomes a large, airy living room as well as providing protection for the helmsman. A doorway in the after end of the deckhouse leads to the open after cockpit which affords ample space from which to fish, swim or enjoy the open air and sunshine. Under the deckhouse is the engine compartment which is well ventilated by blowers and which is easy of access through a large hatch. Summed up, the a.c.f. 36-footer is a handsome, able, and serviceable addition to the a.c.f. fleet.

The other new addition to the a.c.f. fleet, a 30-foot day cruiser, is equally attractive, although designed for a somewhat different use. She was laid out especially for the amateur fisherman, having a large after cockpit. However, ample accommodations for two are provided in the cabin together with a toilet and galley. In addition to appealing to the fisherman, this boat should prove popular with those who wish a boat to knock around in weekends or to use for commuting.

A feature of the two a.c.f. boats is the use of Inconel screens, a product of the International Nickel Company, which are guaranteed not to corrode. It is not necessary to paint the screen to prevent corrosion, and any dirt that accumulates in the mesh can be readily cleaned out with soap and water. Being of greater tensile strength than copper or bronze, it is possible to make the screen of smaller wire, thus allowing more light and air to pass through a given screened-in area.

Distinctive appearance and well-arranged living quarters are found in this 39-foot Seacraft Sport Cruiser. Powered by Kermath



The new 36-foot twin-screw cruiser by a.c.f. is a good combination of beauty and ability. 17 miles with two Chryslers

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Co-Mac's New Cruiser

THE accompanying illustration of the 39-foot Seacraft Sport Cruiser, designed by A. W. MacKerer for the Co-Mac Seacraft Company, of Arverne, L. I., gives only a slight indication of the fine qualities of the smart cruiser exhibited at the Show by this new firm.

On an over all length of 39 feet, beam of 11 feet, and draft of 3 feet, she has a large forward cockpit, seating four persons, spacious accommodations for sleeping four in a comfortable main cabin, and a 15-foot cockpit.

The forward cockpit is reached through a hinged hatch in the main cabin. To port of this exit is a toilet room and large clothes locker, and to starboard a roomy galley with ice box, sink, three-burner stove and plenty of cupboard space.

Engines are installed under a flush hatch, with controls and wheel on the port side. Regular equipment includes a Lux Carbon-Dioxide fire extinguisher system, electric bilge blower, and Protectoseal safety fuel tanks. Twin Kermath 80 h.p. engines give her a speed of 17 miles per hour.

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New Richardson Cruisers for Every Use

THE Richardson Boat Company, North Tonawanda, N. Y., are exhibiting their new models for 1934, which in beauty, accommodations and speed, surpass those of other years, even though those earlier models were always among the high lights of the Show.

The Richardson fleet consists of three different sizes and hull models, each size being available in several different arrangements. These three sizes are known as the Little Giant, the Richardson Junior, and the Cruisabout.

Starting with the smallest of the three, the Little Giant, one finds that this model,

brought out first last year, has been increased in length to 24 feet, and that the additional length improves both the appearance and accommodations. Well arranged for cruising, there will be found below two spring mattress berths, galley, toilet room, and plenty of locker space. Two folding upper berths may be installed if desired. Cockpit is exceptionally large. Power is a 4-40 Gray giving a speed of 15½ m.p.h. The same hull is also offered in a commuter model with short cabin and extra long cockpit.

The Richardson Juniors for 1934 are 28 feet long, 8 feet 2 inches beam, 2 feet 4 inches draft and are offered with three interior arrangements — as a commuter model, as a standard cruiser similar to the Little Giant, and as a raised deck trunk cabin cruiser or de luxe cruiser, with complete accommodations for four in the trunk cabin, and a cockpit protected by windshield and canopy.

The Richardson Cruisabouts for 1934 are 32 feet long and the beam has been increased from 9 feet to 9 feet 6 inches. The hull has been entirely redesigned so that the full beam is carried as far forward as possible without interfering with the pleasing appearance of the hull. There is much more flare and flam than on previous models. Another new feature of the 1934 Cruisabouts is the square front cabin. Previous Cruisabouts were built with a cabin having a curved front. The new cabin is considerably lower than that of previous models and, consequently, is more pleasing in appearance.

The Richardson Cruisabouts for 1934 are offered in eight arrangements, namely: Single Cabin Open Cockpit, Single Cabin Enclosed Cockpit, Double Cabin Open Cockpit, Double Cabin Enclosed Cockpit, Vee-drive Open Cockpit, Vee-drive Enclosed Cockpit, Day Cruisabout with open cockpit and Day Cruisabout with enclosed cockpit. The prices of the 1934 line range from $1245 to $4435, depending on the size, arrangement and equipment.

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The New Chris-Craft Models

THE 1934 Chris-Craft fleet includes 24 new models and types of runabouts, utility boats and cruisers, a number of which are at the Show.

Among the many new Chris-Craft developments for 1934 is the introduction of several entirely new runabout models which differ in length from previous models; a new 18-foot model double cockpit forward runabout with direct drive; an entirely new series of utility models; a new 24-foot utility cruiser with sleeping accommodations for two; the introduction of a new 24-foot family cruiser with sleeping accommodations for four; and the addition of a Chris-Craft-built 4-cylinder, rubber mounted, 55 h.p. marine motor.

The new runabout line includes 15½, 16, 18, 21, 25 and 27-foot boats with "level riding" featured throughout all models. Prices range from $795 to $6,500. The introduction of the new Chris-Craft-built power plant, together with Level Riding and refinements in motor application, make possible an economy of operation that compares favorably with that of low-priced automobiles.

For the first time, Chris-Craft is offering an 18-foot runabout with double cockpit forward and direct drive. This is made possible by a unique method of installing the motor and a new design by Jay Smith, by means of which the necessity of gear box construction and consequent loss of power has been eliminated. For those who prefer cockpits fore and aft, or desire additional speed, there are three additional models, varying in top speeds from 30 to 36 m.p.h.

Custom 21-foot runabouts are offered in two types equipped with 85 or 125 h.p. motors, with speeds from 33 to 36 m.p.h. The 25-foot custom models which recently won the Gold Medal at the Paris Salon Nautique are again included in the line.

Besides the familiar 31- and 36-foot cabin cruisers, Chris-Craft is introducing for the first time a 24-foot utility cruiser which combines the advantages of a utility boat with sleeping accommodations for two. Ideally suited for fishing, cruising, camping and water sports, it is powered with a 55 h.p. rubber-mounted Chris-Craft motor which drives it anywhere from 3 to 20 m.p.h.

Another attractive newcomer is a 24-foot family cruiser, with 7′ 9″ beam and 22″ draft. She has a double-planked bottom, and is built to the same rigid requirements and of the same materials as the popular 31- and 36-foot models. There is 6 feet headroom in the cabin, four berths, galley, toilet room, etc. The 55 h.p. Chris-Craft motor drives her over 18 m.p.h.

The 1934 Double Cabin Enclosed Bridge Richardson Cruisabout is ideal for a home afloat. A Gray motor gives a speed of 15 miles

Another a.c.f. product is this 30-foot day cruiser, with excellent accommodations for her size. Chrysler-powered

The Richardson Little Giant offers as much as it is possible to get in a 24-footer. 15½ miles' speed with a 40 h.p. Gray

A small Chris-Craft Cruiser to fit the family budget. Sleeps four and can be speeded up to 18 m.p.h.

John G. Alden

THE outstanding exhibit at John G. Alden's booth is one of the stock Alden Frostbite dinghies, a number of which have been making enviable racing records in races this fall and winter. This little boat is a beauty, loaned by an owner for the Show, and complies in every respect with the requirements of Class A of the North American Dinghy Association. While remarkably fast sailers with the stock lug sail of 72 square feet area, these Class A dinks are exceptionally fine yacht tenders, easy to row and easy to hoist aboard. They have passed rigid towing tests supervised by officials of the Dinghy Association. Planking is Peruvian cedar, copper riveted, spars are clear airplane spruce, beautifully tapered, and all material and equipment is strictly high grade. Models and photographs complete the exhibit at this booth, where Mr. Alden and several assistants are always ready to discuss plans for new yachts of all types, or submit details of the many yachts which this firm has for sale.

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Johnson Sea Skiff

THE Hubert S. Johnson Boat and Engine Works, Inc., of Bayhead, N. J., has joined the exhibitors this year at the Show and has on display a trim little 18-foot utility boat or yacht tender built along the lines of the New Jersey sea skiff. The engine, a 45 h.p. Lycoming, is located in the stern and drives the propeller through a Morse Transfer Unit. A Monel metal propeller shaft drives through a Goodrich Cutless bearing and turns a Federal-Mogul wheel. This husky but beautifully finished little boat will seat eight people, and she steps along at 20 m.p.h.

One of the smallest sailboats in the Show is the Cape Cod 12-footer, a flat bottom sharpie type with broad beam and simple rig.

The Cape Cod Ship Building Corporation has a number of other models in their line, about which information may be obtained at their booth.

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A Yacht Tender and a Small Sail Boat

THE Luders Marine Construction Co., of Stamford, Conn., have an exhibit which is attracting adherents of both sailing and motor driven craft, and which consists of a 16-foot power yacht tender and the new Luders Red Wing Sloop.

The yacht tender is a 16-footer with 4 feet 9 inches beam and 1 foot 4 inches draft, built of cedar with mahogany trim, frames of white oak and fastenings of bronze, plugged. Powered with a Gray Light Four engine which develops 32 h.p. at 3,000 r.p.m., her top speed is 20 miles an hour, and the hoisting weight under 1000 pounds.

The Red Wing is a modern jib-headed sloop 17 feet 5 inches long, 5 feet beam and 3 feet draft, and makes a splendid little day sailer or racer, several already being in use for one-design class racing in a prominent Long Island Sound Club. She is a V-bottom model, keeping many of the desirable features of the former round-bottomed Red Wings built by the same firm, the change being responsible for a generous reduction in price over former years. She is a beautiful job of work, and built of the finest materials, as is the power yacht tender.

Whitney 23-Foot Cruiser

THE Whitney Woodcraft Corporation, of East Hartford, Conn., builders of stock and custom cruisers, are exhibiting an interesting and new little 23-foot cruiser. With a surprising amount of accommodation space for her length, this new boat is just the thing for short week-end cruises. A 6-cylinder Chrysler engine on rubber mountings provides the power and gives her a fine turn of speed.

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Cape Cod Boats

AS USUAL the Cape Cod Boat exhibit is one of the focal points on the main floor. Here the Showgoer, if he is interested in small boats and sailboats, can find among the five models displayed a boat to suit his taste and pocketbook.

The largest boat in the Cape Cod line is the 18-foot Baby Knockabout, an able and handy boat and one which makes for good class racing.

One of the newer models, the 15-foot Nimblet, is also a drawing card. This little boat is smooth planked and has a conservative Marconi rig.

The Cape Cod Kitten, a 14-footer, is ideal for youngsters as well as grown-ups. She is easily handled, being cat-rigged, and is a rugged and able type with ample stability.

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Sparkman & Stephens

AS USUAL, Sparkman & Stephens, naval architects and yacht brokers, are on hand with an interesting lot of plans and models of yachts which they have designed and built, or which are building this winter. In addition, there is a model of a Class J sloop, which should be

of special interest inasmuch as the America's Cup Races will be sailed in Class J boats, as they were in 1930 when *Enterprise* beat *Shamrock V*.

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Federal-Mogul Tru-Pitch Propellers

SOME revolutionary advances in propeller construction and equipment have been developed in the research laboratories of the Federal-Mogul Corporation, Detroit, makers of the famous Tru-Pitch wheels. One of the innovations is a new process for the elimination of electrolytic corrosion of propeller wheels. This destructive condition, which has long baffled metallurgists, has been largely overcome by the research engineers of the Federal-Mogul Corporation after months of experiments and tests. The same thorough-going research which developed the special wheels for Commodore Wood's *Miss America X* and George Reis's *El Lagarto* has been utilized in the study of electrolysis and the finding of a method to prevent it. The results of this research are exhibited at the Show.

Although yachtsmen have long recognized the necessity for carrying a spare propeller in case of loss or accident, there has heretofore been no convenient method of storing the spare wheel in a way that would preclude damage. The Federal-Mogul Company have now perfected a bronze spare wheel carrier, furnished with or without a lock, which can be bolted securely to a bulkhead or other convenient location, thus giving the boat owner that added security and protection that a spare tire affords a motorist.

Other features of the 1934 Tru-Pitch line include the enlargement of the line of sizes to embrace all the more popular pitch and diameter combinations up to 40 inches. Through special arrangements with the International Nickel Company, Tru-Pitch propellers of all sizes will henceforth be available in Monel Metal.

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Texaco Features Speed and Service

SPEED and service are feature themes of the Texas Company exhibit at the Motor Boat Show.

The speed theme is based upon Gar Wood's victories with *Miss America X*, which used Texaco products in the Harmsworth race, and established the world's unlimited hydroplane record. In a proscenium in the center of the exhibit is a reproduction of *Miss America X*, with a foreground of water and a background of land, the whole moving to simulate speed.

Service is suggested in a section of the exhibit allotted to Texaco National Waterways, the routing bureau recently inaugurated by Texaco. Texaco National Waterways Service occupies one end of the exhibit, and the other space is reserved for working models of a Diesel and an outboard engine, indicating the wide range of the use of the company's marine products. Samples of Texaco marine products are spread liberally throughout the display, the whole of which is brilliantly set forth by indirect lighting.

+ + +

The Godfrey Pitchometer

HAS your wheel the correct diameter and pitch? Do you get excessive vibration? Are you getting the power and speed out of your motor and boat which you should get? Perhaps you're not sure about these things. Then go to the exhibit of the Godfrey Propeller Adjusting Corporation, where the Godfrey Pitchometer is being exhibited. See how this remarkable machine works — easily, unerringly. Wheels which look true are definitely proven to be untrue in pitch — which means loss of power and efficiency, and probably shaft vibration and wear. Once the error is determined, Godfrey corrects it — and your boat travels faster, more economically, and with a noticeable lack of vibration. Don't miss the Godfrey exhibit on the third floor.

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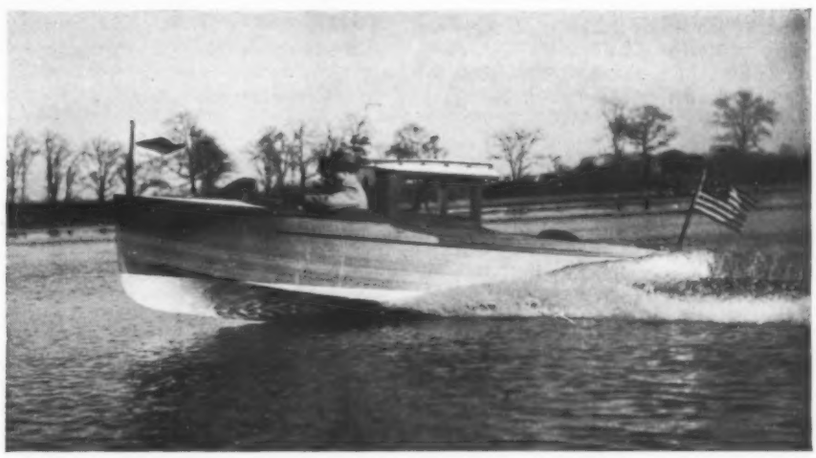
Dulux Finishes

THE exhibit of Dulux Finishes, made by the E. I. duPont de Nemours Co., of Wilmington, Delaware, is of distinct educational value to anyone interested in marine paints. While Dulux is not paint, it does the same work, and is applied the same way. Developed by duPont after five years of intensive research and experiment, Dulux is offered with the greatest confidence as the answer to the question of what is best to use on your boat. It goes on like paint, and dries quickly. It retains its color and fine appearance for an astonishing length of time, and wears remarkably well. It is gasoline- and oil-resistant, and also resists discoloration from hydrogen sulphide gases so often found in harbor waters.

Practically all colors are available, for both outside and inside use, and there are several more colors for use on engines, smokestacks, etc. The many users of Dulux are highly enthusiastic over its remarkable qualities.

A new Chris-Craft all-purpose boat with removable enclosed shelter forward



One of the 16-foot Ludership tenders at 22 miles-an-hour. Snappy in appearance, dependable in operation

Dodge Runabouts and Utility Boats

THE Dodge fleet for 1934 includes no less than 35 models, some of which introduce an entirely new method of bottom construction which will add greater sturdiness and still more speed to Dodge boats. The full line includes both standard mahogany runabouts and a largely augmented choice of the utility boats. Dodge boats range in size from 16 feet to 28 feet, and reach speeds up to 46 miles an hour.

Of chief interest, perhaps, is the line of utility boats. The famous 19-footer is continued, with added improvements and new features. A new 16-foot hull, a new 20-foot hull, and a new 25-foot hull, present a choice of finish and equipment, and of power plant, to meet any need.

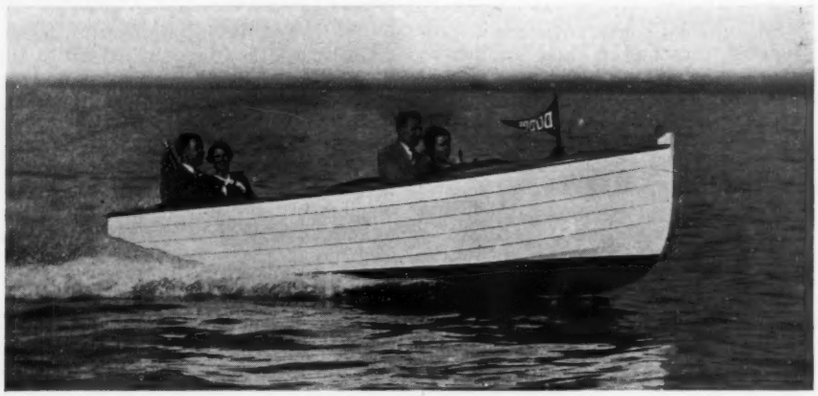
The new 16-foot utility boat is available in two models. A "standard" with white painted hardwood hull, which makes 25 m.p.h.; and a special model of natural finish Philippine mahogany, equipped with automobile steering, shatter-proof windshield and de luxe equipment throughout, including nickel silver fittings, and comfortably upholstered seats.

The New Dodge Multiple Vee-bottom construction greatly reduces side spray and insures dry riding in all weather. This construction has a tendency to build the water under the boat in "tracks," which accelerates the speed. All Dodge boats are built with double-planked bottoms (in multiple vee-type construction, fastened through three thicknesses of solid planking) adding still further strength.

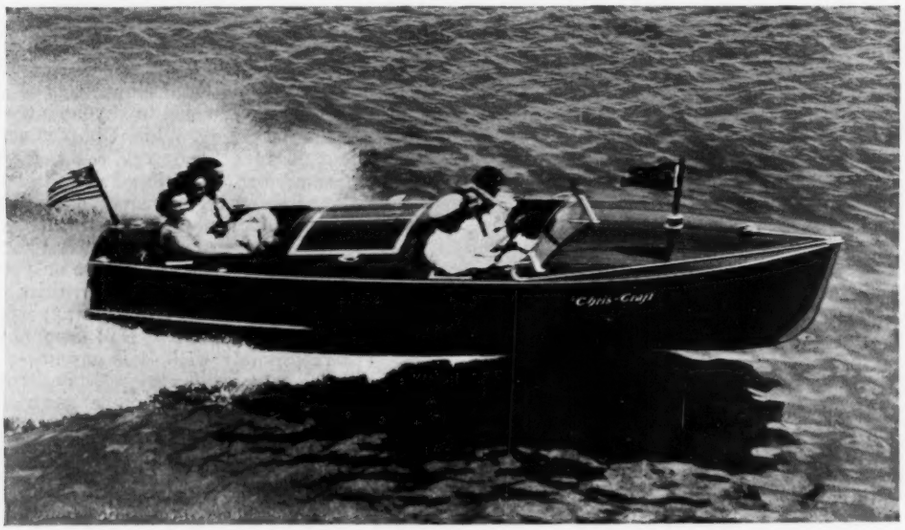
The 20-foot hull offers a choice of two open and two cabin-enclosed models. The standard models are finished with a white hull. The special models have a natural finish Philippine mahogany hull, in addition to de luxe equipment. A choice of three engines is offered — a 4-cylinder, 45 h.p. engine, and two 6-cylinder power plants, one of 62 and one of 93 h.p.

The 25-foot hull offers a big, powerful boat. The standard 25-foot runabout powered with a 115 h.p. straight-eight engine, makes 28 miles an hour; with a 165 h.p. engine the speed is 32 miles an hour. Special models, with de luxe equipment and fittings and the new Dodge Multiple Vee-bottom construction, make 32 and 35 miles an hour with the same power plants.

In addition to the utility boats, Dodge presents six standard runabout models in mahogany, ranging from 16 feet to 28 feet in length.



The Dodge Utility Runabout lives up to her name and will do 25 miles with a Lycoming motor



A new Chris-Craft 16-footer with the level riding features which characterize this builder's line

New Seaway Yacht Equipment

THE exhibit of the Seaway Equipment Corp. shows many new items of yacht and pleasure boat equipment, the result of research and development during the past few years when the rush of production slackened.

Some of the items shown are: Seaway alcohol stoves with a newly designed burner; Saf-T Solid cooking and heating fuel; Fiege Stainless Steel Rigging Fittings, eliminating splicing; Seaway inboard motor dinghy; lighting plant with water cooled engine; Seaway Blue Flame galley stove, and the Clark Navigating Calculator.

The Seaway Inboard Motor Dinghy is particularly worthy of attention. It is a 10-foot by 4½-foot lapstrake dinghy designed by P. L. Rhodes, and equipped with a 2 h.p. 4-cycle engine with self-starter and reverse gear, the whole weighing not over 300 pounds. It can be stowed in the same space as any conventional type dinghy, yet will carry five adults.

Saf-T Solid Fuel is a very remarkable type of stove fuel for boats, with every desirable characteristic — safety, high heat and simplicity. It is in a dry form representing utilization of the Hydrocarbon in a form that was sought for many years.

A New 16-Foot Gar Wood Runabout

GAR WOOD, Incorporated, known throughout the world as builders of high class speed boats, exhibit three runabout models at the Grand Central Palace. One of the three is a new 16-foot runabout that will be shown for the first time. This small, complete craft is an exact reproduction of the larger Gar Wood models, has a rated speed of 34 miles per hour, and is offered to the motorboating public at an extremely low price. This new model is constructed for both salt water and fresh water use. The hull is of mahogany, deck fittings are nickel silver, chromium plated. The 70 horsepower Chrysler marine engine, under flush hatches, is located between the forward and after cockpits. There is ample seating capacity for five adults.

In addition to 16-35, the featured model, there are 19 other models in the Gar Wood line for 1934, ranging from the 18-foot series to the 40-foot cabin cruiser, and with a wide price range. Every boat in the line has the Gar Wood Vee-type hull construction, with flush deck design.

Though all the Gar Wood boats have very high speeds in their respective classes, they are primarily pleasure boats with comparatively large carrying capacities and, therefore, sturdily built and thoroughly safe and seaworthy.

Another of the Dodge line—a Special Utility Runabout with many new features

Quality is apparent in this Gar Wood 18-foot runabout. A speed of 36 miles is attained with an 85 h.p. motor

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Marine Gadgets

THERE are a number of attractive marine specialties in the exhibit of the Kilborn-Sauer Co. Several marine searchlights are well worth investigating, especially the one designed for sailing craft. Running lights and pole lights are there, too. A luminous buoy, visible on the darkest night, is quite a feature. And a really strong, rugged, galvanized bilge pump at a low price. And several novelties. Don't miss this exhibit.

Gifford-Wood Midshipman Horizontal Engines

GIFFORD-WOOD CO., Hudson, N.Y., are exhibiting two models of their Midshipman II inboard engines. Model L is a low speed, 85 cu. in. displacement motor developing 21 h.p. at 2000 r.p.m. and weighing 225 lbs., complete with electric starter and built-in reverse gear. Model H, a high speed engine has the same displacement, develops 33.5 h.p. at 3200 r.p.m., and has dual downdraft carburetion and weighs 205 lbs. completely equipped.

Both models are of the 4-cycle, 4-cylinder horizontal opposed type introduced by Gifford-Wood last year. This construction results in utmost compactness, permitting installation in approximately 2′ by 2′ by 1′ height above crankshaft centers.

The changes over last year's models are designed to increase the marked sturdiness and reliability for which the Midshipman II motors have established a reputation. The 1934 models have crankshafts of chrome nickel steel, statically and dynamically balanced and drilled for pressure lubrication. In addition, an improved type of oil baffle in the flywheel housing has been introduced and a more powerful starting motor has been incorporated as standard equipment. (See page 105.)

Due to the compactness of Midshipman II engines, they are frequently installed at the stern, almost up against the transom, where practically no valuable space is occupied. The value of this type of installation is further enhanced by means of Gifford-Wood stern drives.

There are two models of these drives, A-50 for engines up to 80 h.p. at 3000 r.p.m., and A-25 for engines up to 35 h.p. at 3000 r.p.m. Either model may be had with a 1: 1 or 1¼: 1 ratio. The lighter unit weighs 62 lbs. in aluminum construction, the heavier model, 70 lbs. Bronze construction also is available.

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The New Hercules Diesel

THE Hercules Motors Corporation of Canton, Ohio, have on display a 6-cylinder, solid injection, high compression, full Diesel engine for marine purposes. This engine is known as Model DX1 and has a 5″ bore and 6″ stroke, and is constructed to operate at speeds up to 2000 r.p.m.

Its design and construction follow the usual Hercules practice, particular attention being given to symmetry, compactness, and pleasing appearance, with accessibility, durability and reliability as most important requisites.

An electric starter is mounted on the right side. The starting ring gear is shrunk on to the front flywheel.

In reference to performance, the DX1 will develop from 100 h.p. at 1000 r.p.m., to 177 h.p. at 1800 r.p.m., and 188 h.p. at 2000 r.p.m. with a B. M. E. P. of 110.3 lbs., 109.6 lbs., and 105.5 lbs., respectively.

The fuel consumption is .383 lbs. per brake horsepower per hour at 1000 r.p.m., .430 lbs. per brake horsepower per hour at 1800 r.p.m., and .46 lbs. per brake horsepower per hour at 2000 r.p.m. with the above B. M. E. P.

Sterling Vikings, Dolphins and Petrels

THE Sterling line of high grade marine engines is again shown on the mezzanine floor of the Grand Central Palace in a setting whose attractiveness equals that of the engines themselves. The models shown as representative of the Sterling line are as follows:

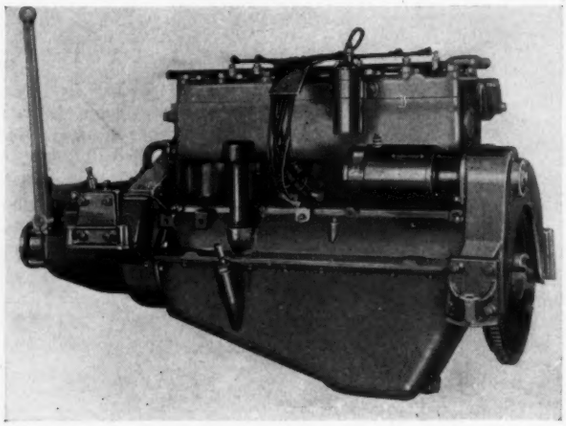
Sterling Viking, eight-cylinder, 565 h.p. at 1200 revs. This is a straight line engine, and is the largest displayed by this company. A six-cylinder model, of the same series, rated at 425 h.p. is also to be found in the Sterling booth. This is the type of Sterling found in many famous yachts, in the 78-foot Coast Guard cutters and in many municipal fire boats. Reverse gears are by Sterling and are designed to reverse at engine speed, with a capacity in excess of 450 h.p. in reverse without appreciable temperature rise. Dual valves — two inlet and two exhaust valves per cylinder — characterize these models, which embody the best and latest in marine engine design and construction.

The Dolphin models, in six- and eight-cylinders — in which the dual valves and counterweighted crank shafts were first used — appear substantially the same as in previous years. These engines have 5¾″ bore, 6¾″ stroke. The "Six" rates up to 300 h.p. at 2000 r.p.m., and weighs 7.7 pounds per h.p. The "Eight" develops 300 h.p. at 1500 r.p.m.

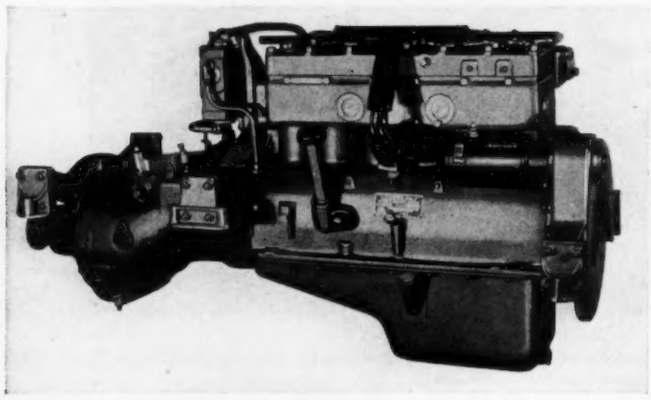
The Sterling Petrel six-cylinder engine is shown for direct drive, 225 h.p., 2150 r.p.m. This engine has 5¼″ bore, 6″ stroke, and is built in a variety of speed ranges, for direct drive, and for use in combination with the Sterling angle drive gear box. One model of the Petrel is shown with the integrally built 3 to 1 reduction gear. This model is rated normally at 180 h.p. at a maximum speed of 1800 r.p.m., with slightly modified compression, in order to accelerate a large propeller without detonation. The Petrel engines have all the characteristics of the Vikings, except that the Petrel model has L-head cylinders.

The Sterling angle gear and companion flexible coupling is a Sterling development based upon the principle of the rear axle of an automobile. After years of experiment the gear box is finally offered, with the assurance that it is absolutely quiet at all engine speeds and loads. The use of the gear box permits placing the motor aft, behind a bulkhead, thus confining all operating sounds of the machinery and isolating them. It eliminates the long lengths of exhaust pipe, and removes piping from below floors or berths.

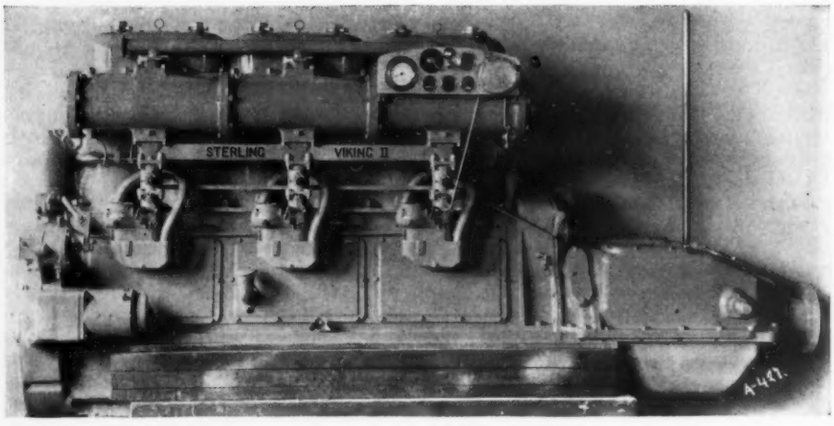
The new Chrysler rubber-mounted 6-cylinder "Ace"



The Chrysler Crown motor, with reduction gear



Below. The Sterling Viking "Six" is an unusually smart looking engine



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New Chrysler Motor

A NEW Chrysler 6-cylinder marine engine is being shown by the Chrysler Co., this being the first public showing of this model. It is the outstanding feature of the 1934 Chrysler line, in which are also included the Crown, Imperial and Majestic engines. The new "Ace" is a rubber-mounted, 6-cylinder engine with 3⅛″ bore and 4⅜″ stroke, having a piston displacement of 201 cubic inches.

The Ace "CM" medium duty type is rated at 27 to 44 brake horsepower at 1000 to 1600 revolutions per minute. The type "C" high duty engine is rated at 44 to 70 brake horsepower at 3200 revolutions per minute.

The Ace type "CR," which is fitted with 2.56 to 1 reduction gear, is rated at 47 to 58 brake horsepower at 700 to 900 revolutions per minute on the propeller shaft. This complete unit will undoubtedly prove a most popular model due to its ability to swing a wheel as large as a 22″ diameter by 22″ pitch at approximately 900 revolutions per minute in a 35- to 40-foot cruiser. Plants of this nature should do much to increase the popularity of boating.

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Scripps Engines in Many Sizes

AS REPRESENTATIVE of its line of 32 standard models of marine engines, the Scripps Motor Company, Detroit, show eight models of various sizes and types and for varying kinds of duty. These engines show a range of from four

to twelve cylinders, and from 53 to 330 h.p.

The eight models exhibited are as follows: Model 302, twelve-cylinder, Vee-type, high speed, rated 330 h.p. at 2800 r.p.m. in direct drive.

Model 202, six-cylinder, high speed, 210 h.p. at 2300 r.p.m. in direct drive.

Models 204 and 205, each six cylinders, left and right hand respectively, rated 155 h.p. at 1800 r.p.m. These two models are arranged to demonstrate the advantages of true symmetrical opposite construction and rotation in twin installation.

Model 152, six cylinders, high speed 169 h.p. at 3000 r.p.m. in direct drive.

Model 154, six cylinders, cruiser type motor equipped with 2.43:1 reduction gear, delivering 110 h.p. at 740 r.p.m. In direct drive this engine delivers same power at 1800 r.p.m.

Model F-6, six cylinders, medium duty, 81 h.p. at 2000 r.p.m. in direct drive.

Model F-4, four cylinders, medium duty, with Morse reduction gear, internal type, ratio 2:1, 53 h.p. at 900 r.p.m. The Standard model is rated 53 h.p. at 1800 r.p.m. in direct drive.

Model F-6 has been so altered and improved that it may practically be considered a new model. It is now made available in two distinct types, viz., high speed, developing 120 usable h.p. at 3000 r.p.m.; medium speed developing 80 usable h.p. at 2000 r.p.m. Model F-4 also shows numerous improvements and alterations.

As it is Scripps policy to consider every improvement from the standpoint of usefulness and possible assistance to boat owners, the addition of reduction gears to medium duty engines, models F-4, 154, 164, 174, and 204, and to right hand engines, models 155, 165, 175, and 205 for twin installations, will broaden the application of these models and make their use possible to the heaviest of pleasure craft.

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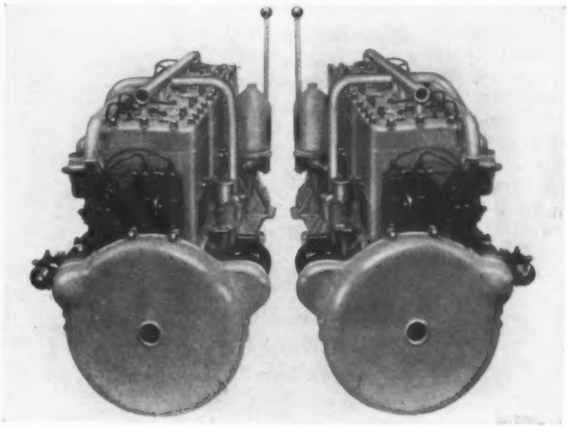
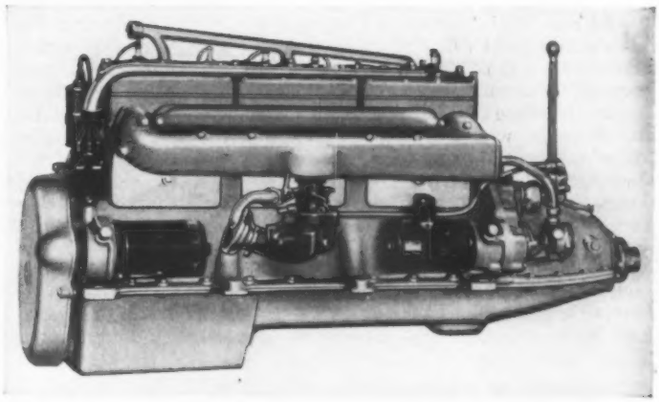
A New Atlas Imperial Diesel

A NEW development in Atlas Imperial Diesel engines is to be seen for the first time at the Show, exhibited by the Oakland, California, company that has long been building Diesel engines for various uses. The particular model shown, a four-cylinder 6″ by 8″ engine rated at 90 h.p. at 100 r.p.m., has been built by the Atlas Engine Company for a number of years, but only for portable or stationary service. Now, for the first time, it is being adapted for marine use. In doing this, the engine has been provided with a new compact fuel pump and distributor system, retaining the Atlas conventional rail system of injection, but with the elimination of certain features which in the past prevented these engines from being operated at the higher speeds. The model shown is of the conventional cold starting, high compression type. Reversing is accomplished through a Joe's Reverse gear.



A pair of left- and right-hand Scripps 6-cylinder engines rated 155 h.p. at 1800 revolutions

The improved model F-6 Scripps may be had in either high or medium speed types



Below. The Sterling Petrel, six cylinders, 5½″ by 6″ bore and stroke

Buda Diesel and Gasoline Motors

A PARTICULARLY interesting and comprehensive display of marine motors, both Diesel and gasoline types, is that of The Buda Company, Harvey, Ill. In all, seven models are shown, four of them being gasoline and three Diesel. The gasoline engines are as follows:

Model HM-205, 4-cylinder, 3-13/16″ by 4½″, 205 cu. in. displacement, showing a maximum of 56 h.p.

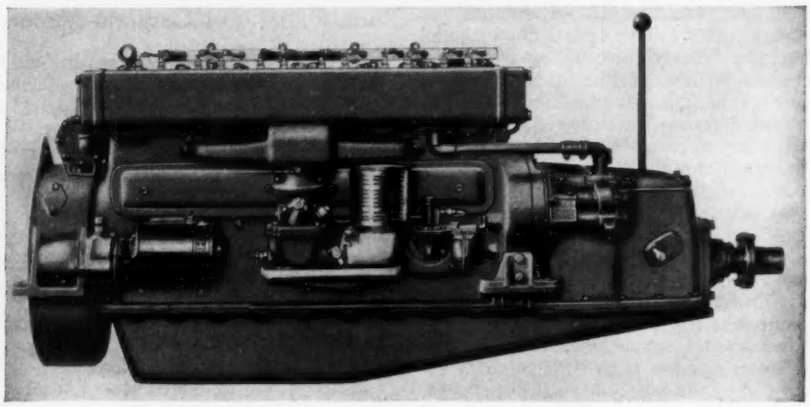
Model HM-298, 6-cylinder, 3¾″ by 4½″, 298 cu. in. displacement, with a maximum of 80 h.p.

Model KM-428-R, 6-cylinder, 4⅜″ by 4¾″, 428 cu. in. displacement, with a maximum of 105 h.p. and equipped with a 2:1 reduction gear.

Model LM-525, 6-cylinder, 4½″ by 5½″, 525 cu. in. displacement, with a maximum of 121 h.p.

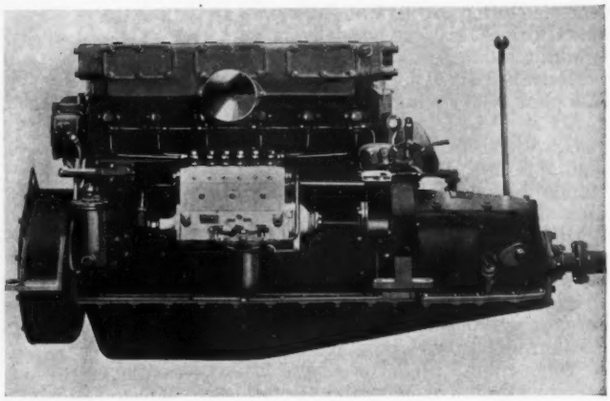
During the past few years the Buda Diesel motors have been making an enviable name for themselves in yacht use, and two of the firm's six-cylinder models are on display. One of these has 5¼″ by 7″ bore and stroke and is rated at 125 h.p. at 1500 revs. The other is 4″ by 5½″, with a piston displacement of 415 cubic inches, of the full Diesel type. Both of these models are especially adapted to yacht use in boats of moderate size.

And now the Buda Company has produced a smaller Diesel engine, for small



One of the Buda 6-cylinder gasoline engines

cruisers and work boats, and of a size that has not been seen heretofore at the Motor Boat Show, where it should attract as much favorable comment as did the small six-cylinder model exhibited last year. This new engine is of 186 cubic inch piston displacement, is of full Diesel type, electrically started and has a 3″ crankshaft with five main bearings. It develops in excess of 40 h.p. and is equipped with a reduction gear of 2:1 ratio. Boat owners will be glad to see these smaller Diesels coming on the market.



A new small 6-cylinder Diesel engine by Buda

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Hall-Scott Marine Engines

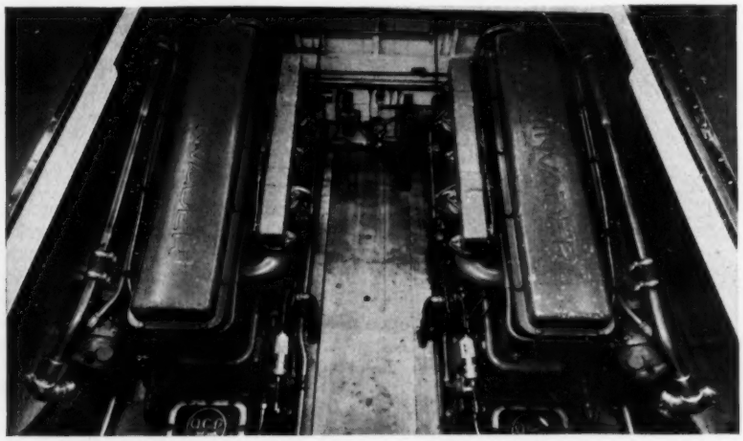
HALL-SCOTT Motor Car Company is invading the Show again with their well-known and time-tested line of Invader, Navigator, and Explorer models. Highest powered of the Hall-Scott engines and a model which has achieved widespread acceptance in boats requiring more than 200 horse power is the rugged, handsome 6-cylinder, 250–275 h.p. Invader with a 2:1 reduction gear. The Invader model is also on the floor in a 6-cylinder, 250 h.p. direct-drive engine, having the same basic construction as the model with the reduction gear. There is also a 180 h.p. Invader model which, like its mates, embodies all the very latest improvements in marine engine design.

The Explorer model, a 6-cylinder, 175 h.p. engine with reduction gear supplied in any desired ratio, is equally as sturdy and highly improved as the Invader models.

Smallest of the Hall-Scott engines on the floor is the 6-cylinder, 100 h.p. Navigator II equipped with reduction gear.

All of the Hall-Scott engines that are built for reduction gears may be equipped with most any desired ratio.

An interesting part of the Hall-Scott exhibit is the display of photographs of numerous boats recently powered by Hall-Scott, together with records as to speed and performance.



A pair of Hall-Scott 6-cylinder Invader engines with 2:1 reduction gear

The Big Kermath Line of Marine Motors

THE Kermath Manufacturing Company, long a builder of fine marine motors, sees in 1934 "the year of recovery," and is turning out what they believe is the largest and most complete line of marine motors ever offered the public. With one of the largest and most completely equipped plants in the country devoted to turning out marine motors exclusively, Kermath not only offers a model for every boat, but for every budget as well. Quality is, as always, a by-word with Kermath, yet their unsurpassed facilities enable them to compete with the smaller units on a price as well as a quality basis.

The complete line comprises 2-, 4-, 6- and 12-cylinder motors, ranging in power from 8 h.p. to 450 h.p. in single units, double in twin screw, all on direct drive, with the option of reduction gear units in each size. Heavy duty models, medium and high speed, with a graduated step-up in piston displacement of 100, 134, 200, 228, 267, 282, 330, 383, 495, 520, 648, 678 and 1414 cubic inches respectively.

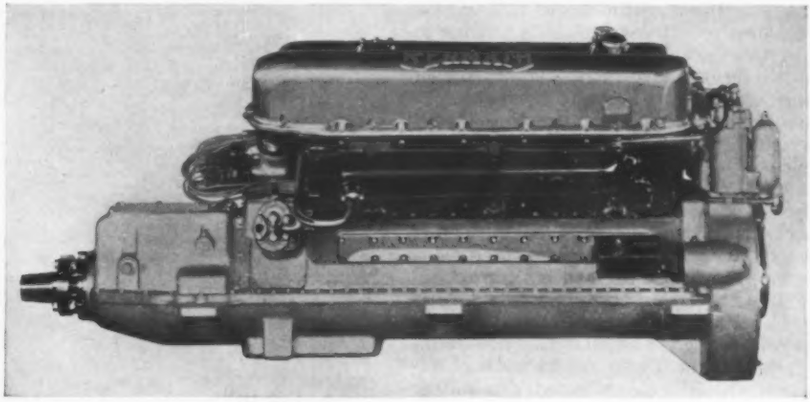
Every Kermath model is not only a thoroughly developed unit from an engineering standpoint, but each and every one has seen service in the final proving ground, the customer's boat. This applies without exception to the entire line, including the newest unit, the Sea-Mate model, a 383-cubic-inch job which has not been announced or advertised.

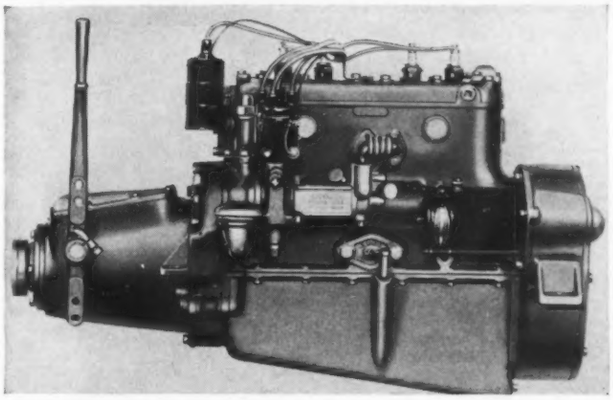
Another new model is the Sea-Bird model with reduction gear. This is a very quiet, powerful, compact four, particularly welcome where economy and first cost, as well as economy of space, are factors. It has a power output of 45 h.p. at an engine speed of 3000 r.p.m. reduced to a propeller speed of approximately 1200 r.p.m., and has won admiration in handling a wheel as large as 20″ by 20″ in sizeable cruisers.

All the familiar Kermath models are still on the job, and all are improved in many ways. Kermath engineers have lost no opportunity to make a good product better. Improved carburetion, increasing the power output and tending toward greater economy and safety, have been particularly stressed.

Fuel Oil Engine Features Red Wing Display

FUEL-OIL marine engines of the "Hesselman" type feature the products of the Red Wing Motor Co. This firm, which has been supplying the marine trade with their famous Thorobred gasoline engines for more than 30 years, was the first to offer fuel-oil engines of this type to the trade in 1933, and their success has led to expansion in engine sizes. Models of the 4-cylinder type of 30, 50, and 70 h.p. are now available, and a series of 6-cylinder sizes of 120, 150 and 180 h.p. are being developed for spring delivery.





The Kermath V-type 12-cylinder Sea-Raider model develops 450 h.p. at 2300 revolutions

A new model offered by Kermath. The Sea Bird, a 134 cubic inch motor which develops 45 h.p. at 3200 r.p.m.

The Hesselman cycle employed is a distinctly different principle from any used previously in fuel-oil engines, yet it is extremely simple. On the intake stroke the cylinder is filled with air only, the amount being metered through a carefully balanced throttling valve and proportioned to the load requirements. A specially designed intake valve directs the air and imparts to it a rotary motion in the cylinders. The air is compressed to a greater degree than in a gasoline engine, but not to the same extent as in a Diesel. At the top of the compression stroke a high pressure Bosch injection pump delivers a quantity of heavy fuel in the correct amount to insure complete combustion. The fuel is injected through special Hesselman injectors which throw it into the rotating air stream where the fuel mist is intimately mixed with the air. At this moment a special spark plug fires the fuel mixture. The unusual success of this cycle is due to the patented features which keep the mixture ratio in the zone surrounding the spark plugs always within the necessary limits for instantaneous combustion independent of the load or speeds. At the end of the power stroke the exhaust valve opens and releases the burnt mixture, and the cycle is repeated.

These engines will burn any fuel that a Diesel will handle, and some fuels that a Diesel cannot utilize. Fuels of such high ignition temperature that they will fail to ignite in a Diesel are practicable in these Red Wings. This means that the Red Wing fuel-oil engines can handle any common commercial fuel oils found anywhere in the world market, being limited only by one condition — viscosity.

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Murray & Tregurtha Fuel Oil and Gasoline Engines

THE Murray & Tregurtha exhibit on the mezzanine floor constitutes one 6-cylinder 325 h.p. high-speed gasoline engine that is built especially for commuters, high-speed cruisers, and large, fast runabouts and a 6-cylinder fuel-oil engine which has some outstanding engineering features that are being shown for the first time on this size and type of engine.

In the showroom of Mr. F. Benjamin Sexton, 125 Lafayette St., New York City, who handles the sale and service of Murray & Tregurtha engines in the New York territory, there are on display a 6-cylinder 325 h.p. high-speed gasoline engine (the same type as the one that is on display at the Boat Show), a 6-cylinder medium-speed gasoline engine, and a 4-cylinder fuel-oil engine (the same type as the 6-cylinder fuel-oil engine that is on display at the Show).

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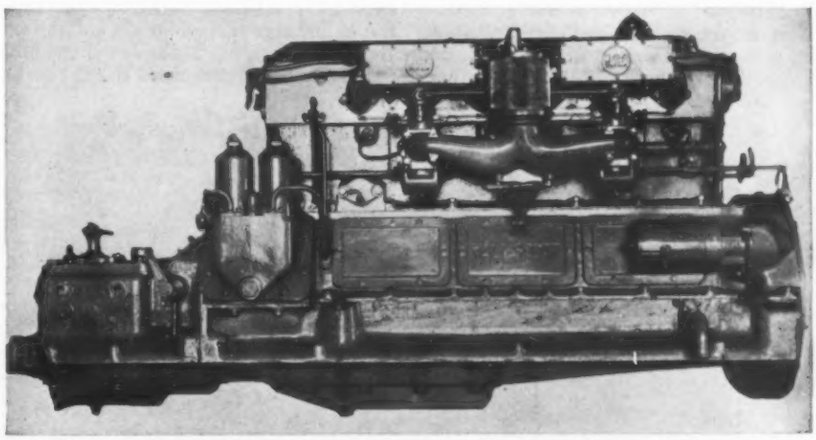
Fairbanks-Morse Diesels

FAIRBANKS, MORSE & COMPANY, pioneer manufacturers of internal combustion engines, are again expanding their broad line of Diesel engines to meet the requirements of other classes of marine service. Their exhibit at the Show features a heavy duty work boat type of two-cycle Diesel engine which has been developed over a period of many years, and which has a background of more than 2,000,000 horsepower of F-M engines now in service. This engine is the direct-reversing type, with airless injection of fuel and air starting. Numerous improvements have been



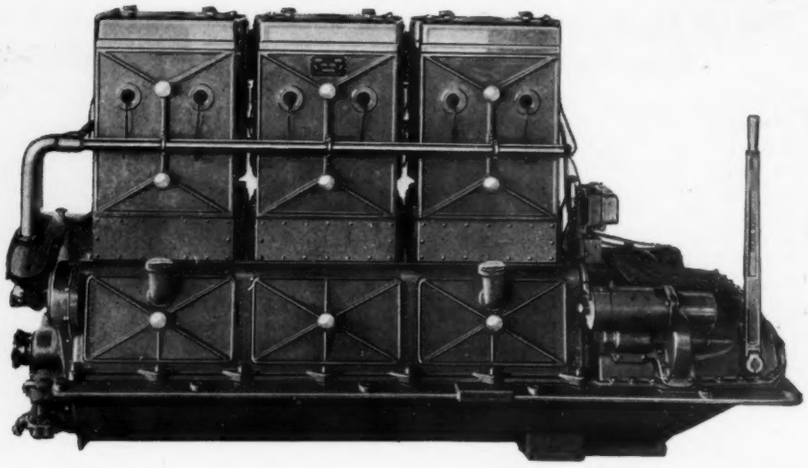
The Hall-Scott heavy duty 175 h.p. motor, with reduction gear

made in the construction of this engine, the most recent developments tending to improve the economy of operation.

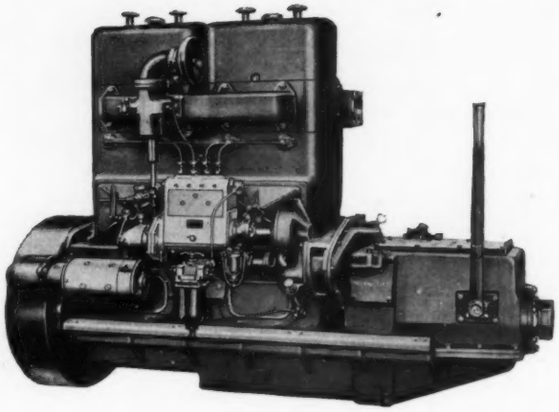
A recently-developed line of smaller engines is being shown to the public for the first time. This line consists of light weight, comparatively high speed four-cycle Diesel engines, built in a complete range of sizes, starting at 8 h.p. They have been developed for propulsion service in the smaller type of work boats, fishing craft, cruisers and yachts. Engines for this service are furnished with built-in reduction and reverse gears.

The same type of engines is also available in a line for auxiliary service on all types of craft. These units consist of engines with direct-connected generators, either D.C. or A.C., also combination units consisting of air compressors and pumps.

This entire line of four-cycle engines is characterized by the light weight and compactness essential for this type of service, also by the extremely simple installation and ease of starting they offer.



Six-cylinder Fuel Oil engine by Murray and Tregurtha; 110–140 h.p. at 700–1100 revolutions



A Red Wing Fuel Oil engine, 6" by 6½" bore and stroke. Rated 70 h.p.

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Winton's New Steel-type Diesel

VISITORS at the Motor Boat Show have an unusual first-hand opportunity to inspect one of the outstanding achievements in the Diesel engine industry — the new eight-cylinder two-cycle Diesel unit developed and built by the Winton Engine Corporation, of Cleveland, Ohio, for the Burlington Railroad's new high-speed, streamlined, passenger train.

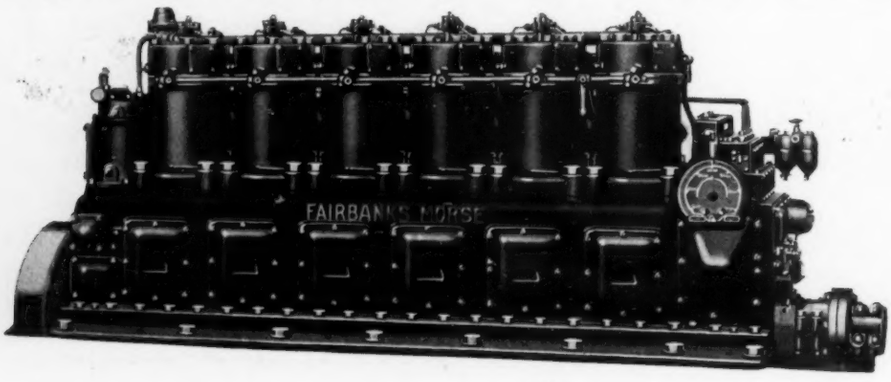
While this particular engine is not equipped for marine use at present, its builders decided to place it on display because they feel that the outstanding engineering advances embodied in its design will be of especial interest to everybody in the marine field, where the Diesel engine plays such an important rôle.

This new Winton development provides a Diesel power plant with a decided increase in horsepower per pound of weight. Steel-type construction gives light weight as well as exceptional strength and rigidity. The new uni-flow two-cycle principle removes the usual two-cycle limitations of port scavenging and exhaust, and by providing practically perfect scavenging greatly increases efficiency. Instead of employing the usual two-cycle method of scavenging known as "loop scavenging," this new principle permits the exhaust gases to pass out through valves in the cylinder head, as in a four-cycle engine.

The scavenging ports are uncovered by the piston near the bottom of its stroke and start to open approximately 24 deg. after the exhaust valves start to open. Both the exhaust valves and scavenging ports are open at the same time, so that when the scavenging air is forced into the cylinder by a blower the air flows through the cylinder in a single direction and out the exhaust valves in the head, expelling remaining exhaust gases. When the exhaust valves open, the pressure in cylinder is greatly reduced, facilitating entry of scavenging air when the scavenging ports are opened.

As a result of this uni-flow scavenging, the percentage of retained exhaust gases is so minute that this new two-cycle Diesel is able to develop a brake mean effective pressure comparable to that of an efficient four-cycle engine. The unit injection system, a new feature, gives clean, smooth, quiet performance.

A cylinder size of 8 in. bore and 10 in. stroke was decided upon, giving 75 h.p. per cylinder at 720 r.p.m., and it is the intention to supply the new engines in sizes of 150 to 3000 horsepower.



A heavy duty 2-cycle Diesel by Fairbanks-Morse, of direct reversing type

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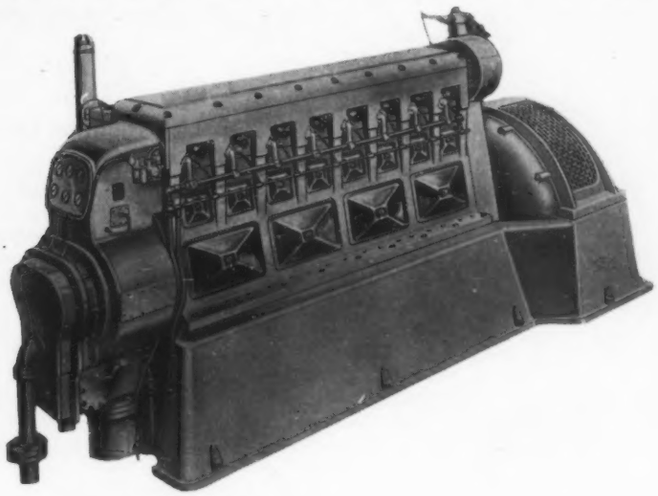
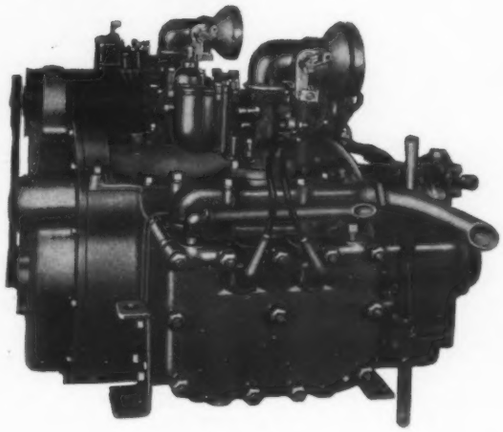


The new Winton all steel Diesel as used by the Burlington Railroad in its motorized high-speed train



The compact horizontally-opposed cylinder engine built by the Gifford-Wood Company

Two Cooper-Bessemer Diesels

THE Cooper-Bessemer Corporation is exhibiting two of their smaller marine Diesel engines. The smaller of the two, known as the Type-BN, has 5½″ by 7¾″ power cylinders and is being offered in three, four, six and eight cylinders, rated 15 to 25 h.p. per cylinder, depending upon the speed.

For direct drive service the engine is offered with marine reverse gear. It is electrically started from a storage battery which is kept charged by a small charging generator mounted on the engine. A Bosch injection system is used and a form of combustion chamber has been developed which gives very quiet operation for a small bore, comparatively high speed Diesel.

The larger engine, known as the Type-EN, has 8″ by 10½″ power cylinders and is rated 25 to 40 h.p. per cylinder. This is a modernization of an older type, of which there are a large number in service. This type is also built in three, four, six and eight-cylinder combinations, the six and eight being direct reversing. The general construction of the two engines is very similar, both being of the water box type with removable cylinder liners.

A number of improved details of design are apparent. Perhaps the most outstanding is that all stresses from main bearings to cylinder heads are carried by steel through bolts which put all the cast iron sections in compression. The injection system is a modification of the common rail, which retains all of its advantages, and by combining it with the new atmospheric relief principle, nozzle dribble and objectionable noise is eliminated. The injector valves are built in blocks and mounted on the side of the engine where they are accessible and easily adjusted.

Both engines are completely enclosed with full automatic pressure lubrication. They are smooth and clean looking jobs that should appeal both to the owner who thinks first of appearance and to the man who is seeking only satisfactory operation.

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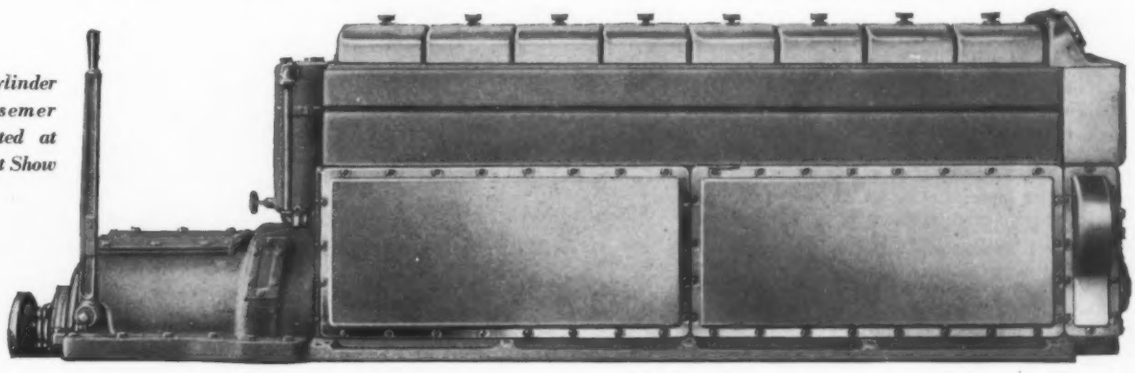
Reduction Gears on Lycoming Motors

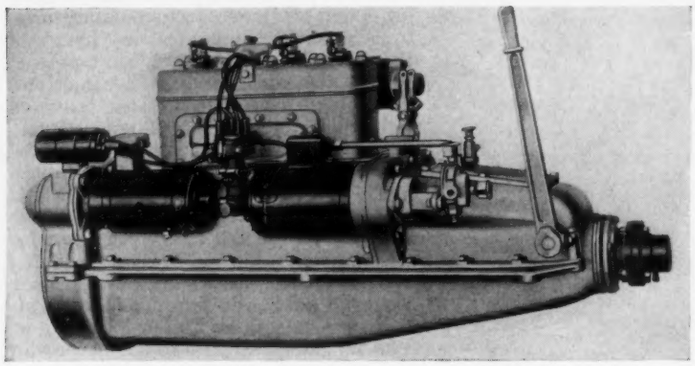
BUILT-IN reduction gears in 4- and 8-cylinder marine engines have been added to the Lycoming line by the Lycoming Manufacturing Company, of Williamsport, Pa., a division of the Cord Corporation. These new engines are a part of the line of Lycoming engines being exhibited at the Show. The 1934 line includes three 4-cylinder models, four Straight-Eights and a "Twelve," with horsepower ranging from 35 to 325.

The new built-in reduction gear models give the boat owner and builder a greater opportunity to utilize the advantages of high speed engines in large boats requiring large diameter propellers. Greater economy in fuel consumption, increased flexibility, smoother operation and lower initial cost are among the outstanding advantages to be realized in the use of high speed engines working through reduction gears.

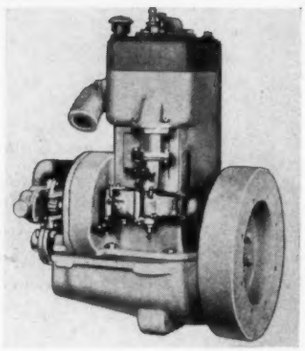
The Model UAB 4-cylinder engine, which develops 45 horsepower, still retains its popularity in the small, high speed runabout class. This engine is also available in a medium duty type delivering 35 horsepower. The reduction gear model of this 4-cylinder engine is complete with a 2.04 to 1 built-in reduction gear. It has already established a reputation as an exceptionally sturdy and efficient engine in boats requiring propeller speeds up to 1375 r.p.m. All of these models have 3⅛-inch bore and 3⅞-inch

The new 8-cylinder Cooper-Bessemer Diesel exhibited at the Motor Boat Show

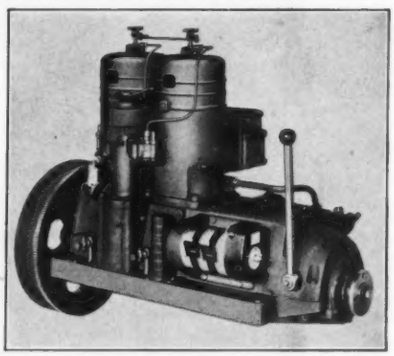




The new 24 h.p. Universal Utility Four and, below, the single cylinder Universal Fisherman



The lightweight 2-cylinder 50 h.p. Bolinders oil engine (right)



stroke, with a total piston displacement of 119 cubic inches.

The Lycoming Model UC Straight-Eight, which delivers 125 horsepower, is also offered with many refinements as a cruiser model with a 2 to 1 built-in reduction gear. This is a very compact power plant especially designed to fit into low engine compartments under bridge decks. The overall height from center line of the crankshaft to the top of the motor is only 19¼ inches. This model delivers 125 horsepower at 3200 r.p.m. direct drive, and is especially suited for use in fast runabouts and light cruisers.

The Straight-Eight, 165 horsepower Model UE is offered as a direct drive model or with built-in 2 to 1 reduction gear, known as Model UED. These engines have 3¾-inch bore and 4¾-inch stroke, with a total piston displacement of 420 cubic inches.

The 12-cylinder Lycoming marine engine, known as Model UF, develops 325 horsepower with velvety smoothness at 2500 r.p.m., due to the overlapping power impulses of its cylinders. It has a 4¾-inch bore and 4¾-inch stroke, with a total piston displacement of 1010 cubic inches.

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Universal Motors

THE Universal Motor Co., of Oshkosh, Wisconsin, is showing a complete line of motors, running in power from 6 h.p. up to 115 h.p., and from a single cylinder engine up to a rugged, powerful eight-cylinder motor. Of the eight motors in the exhibit, six are familiar to most of us, while two are newcomers — the single cylinder Fisherman and the Utility Four. The prices on all motors are the lowest in Universal history, with quality and up-to-dateness a byword on each and every model.

The new 6–8 h.p. Fisherman is a neat, compact, rugged little single-cylinder affair, built for fishermen, or others who want the utmost in reliability in hard, continuous service at a remarkably low cost for gas and oil. It is a 100% marine motor, completely salt water-equipped, easy to start, and operates all day without a murmur, from trolling speed up to full throttle.

The other newcomer, the Utility Four, is, like the Fisherman, a smooth, powerful, rugged and economical motor — economical in first cost, and economical in operating expense. With bore of 2¾" and stroke of 4", it develops up to 20 h.p. at 2000 r.p.m., and may be equipped with reduction gear where power, rather than speed, is the objective. Excellent materials are used throughout, and the equipment includes such items as bronze gear-type water pump, full pressure lubrication, 2-unit, 6-volt ignition system, built-in sump pump, flame arrester on carburetor, etc. Sold at a remarkably low price, the Utility Four is sure to become popular for use in tenders, launches, small runabouts, fishing boats and auxiliary cruisers.

Of the more familiar Universal models, there are the Blue Jacket Twin, the fine little 2-cylinder 6–8 h.p. motor well known on all coasts, and abroad; the Flexifour, a 4-cylinder 30 h.p. motor which has made its mark over a period of years; the Blue Jacket Four, developing 50 h.p., and the Blue Jacket Six, developing from 35 to 70 h.p. The last two of the Universal line are the Cruiser Six and the Cruiser Eight, the former of 65–88 h.p. and the latter of 85–115 h.p.

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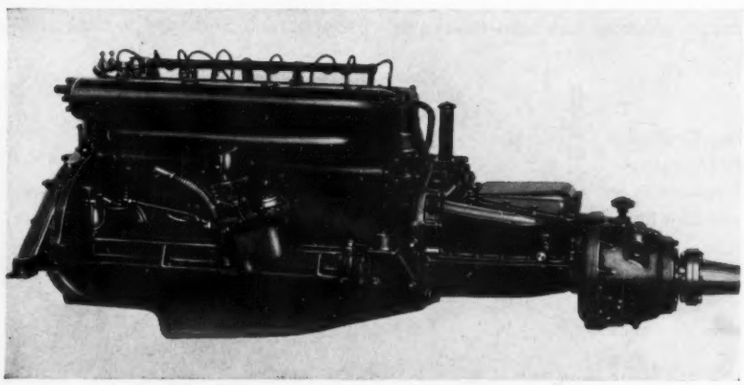
New Hill Vee-Eight Diesel

SUPPORTED by a firm faith in the future of the light-weight Diesel engine, the Hill Diesel Engine Company have utilized their past experience and facilities for the development of a new engine, 100–200 h.p., which is attracting wide interest among Showgoers.

The Vee arrangement of the cylinders not only provides the shortest possible fore-and-aft length, but it contributes to extreme rigidity, eliminates crankshaft whip, and holds the necessary weight to the minimum without sacrificing strength or accessibility.

The low height, 30¼ inches, makes the engine adaptable for under-bridge-deck installation, and the low center of gravity is desirable in any type of boat. The total length without reduction gear is but 80 inches. Provision is made for the attachment of reduction gears of any reasonable ratio. A powerful yet sensitive governor and a charging generator are mounted between the cylinder blocks.

The governor is in full control of the injection pumps throughout the entire range of speed, therefore the reverse gear may be maneuvered at will without the necessity of juggling the control, or racing the engine to prevent stalling. The 32-volt starting motor is equipped with Bendix friction gear meshing with a ring gear on the flywheel.

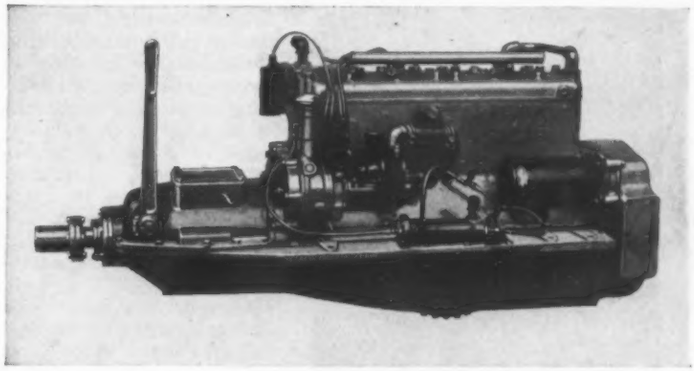


The 8-cylinder 125 h.p. Lycoming with reduction gear

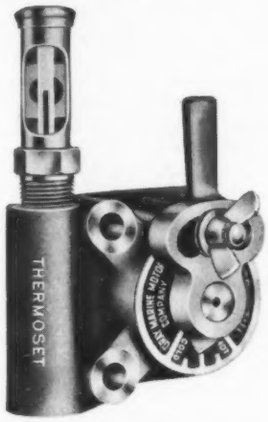
Gray Motors for Every Service

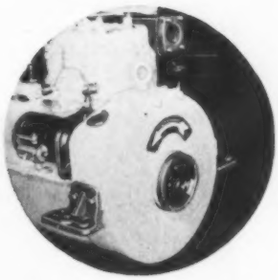
IN A prominent position on the mezzanine floor the Gray Marine Motor Company, of Detroit, exhibits two complete lines of motors, with many new and special features seen for the first time this year.

The Standard Line of cruiser and workboat engines includes "Fours," "Sixes" and "Eights," from 10 to 120 h.p. These engines are available for either single or twin-screw installation, direct or reduction gear drive.



The new 62 h.p. Palmer-Hercules conversion





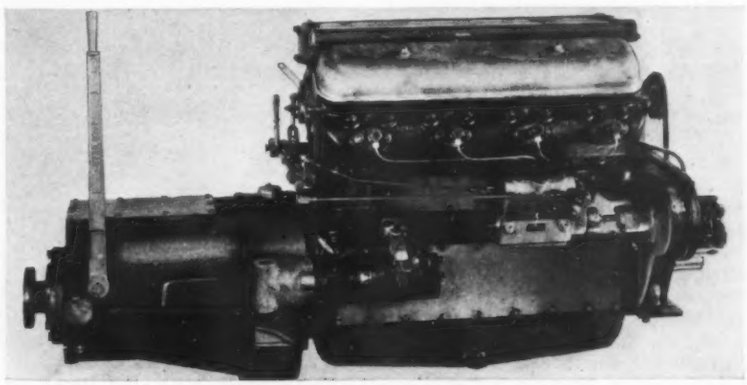
New features on Gray engines. Left to right, temperature control, rubber mounting, and double end manifold, Bendix inspection plate, and flywheel pulley

The Phantom Line of high speed and racing motors includes two "Fours," two "Sixes" and the "Phantom Eight," with a power range from 30 to 150 h.p. Special features of these engines are short over-all length, high power-to-weight ratio, certified engine weight, and a usable and effective speed range up to 4000 revolutions for the "Fours," and 3600 revolutions for the "Sixes" and "Eight."

An improved Vee-Drive gear by Gray is also to be seen, as well as many of the new features incorporated in this year's models. Among these may be mentioned the new thermostat for positive temperature control for maintaining the desired temperature, from 150 to 180 degrees F., to give the greatest fuel economy and highest power possible. This device consists of a simple, sturdy, bronze three-way valve mounted on the top side of the exhaust manifold of all medium and heavy duty Gray marine motors. Attached to one side of this valve is a high grade thermometer, marked to indicate clearly the proper operating temperature. A simple handle controls the valve, which raises or lowers the engine temperature as the operator sees fit, or as operating conditions demand.

Another feature worthy of note is a new and improved type of double synchronized distributor developed by the Auto-Lite Corporation in conjunction with Gray engineers which will be used in 1934 as standard equipment on Gray Models "Four-56," "Six-75," "340," "380," "480" and "530." This distributor occupies very little more space than the standard distributor, but uses two coils and a double set of breaker points which are permanently synchronized.

Accessibility is particularly featured in all 1934 Gray motors. For the past several years the Gray Marine Motor Company has employed an experienced man whose most important job is to study every new design from the standpoint of accessibility.



The new 100–200 h.p. Vee-8 Hill-Diesel

Palmer-Hercules Conversion

PALMER BROS., of Cos Cob, Conn., are introducing in their exhibit, which includes motors from 2 to 150 h.p., the new Palmer-Hercules Conversion, an engine developing 50 horsepower at 1750 r.p.m. and 62 horsepower at 2200 r.p.m.

With the new Palmer ball-bearing high-speed clutch, water-cooled and filtered pressure lubricating oil system, they offer an engine to run at higher speeds than their former products, but with the same stamina and dependability that has always characterized Palmer engines. This conversion is a real marine job. In the first place it is not a converted, light automobile engine, but a heavy duty truck engine.

The new Palmer High Speed Clutch has been added to this engine, giving 100 per cent efficiency ahead and 80 per cent efficiency in reverse. The clutch is fully enclosed to keep out sand and salt water and the discs run in oil. Ball bearings and hardened and ground gears insure quietness and long life. The action of the Palmer Clutch is positive — when the control lever is put in position it stays put.

The new engine is compact, measuring only 16¾″ in height, 17″ in width, and 52½″ in length. It weighs only 840 lbs. and sells for $650 f.o.b. Cos Cob, Conn.

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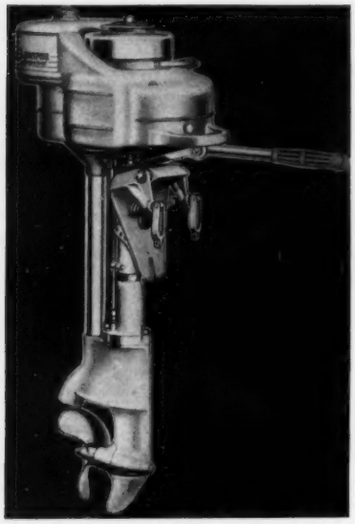
The Bolinders Diesel

THE Bolinders Co., of 33 Rector street, New York, are showing one of their new Type W-7 Diesel engines, made in horsepowers of 25, 50 and 100. This is a unique engine in several respects, as it is essentially a light weight, heavy duty motor, as simple as possible in build, with workmanship that is unexcelled.

The engine operates at 800 r.p.m. normally, can be operated up to 1000, has built-in reverse gear, and the main bearings are double roller S.K.F. Each bearing has approximately 28 rollers. The piston pin bearings also are of the needle roller type.

The engine has a bore of 7⅛″ and a stroke of the same dimension. The crank shaft is 3¼″ in diameter, and the connecting rod bearings crank ends are 3¾″ by 3¾″ brass, babbitt-lined.

The engine weighs, in the 50 h.p. size, complete with all equipment, 1980 lbs.



The new Elto and Evinrude Light-four Imperial

Outboard Motors Corporation Show 1934 Evinrude and Elto Motors

A NEW development in outboard motor design, "hooded power," is shown to the public for the first time at the Grand Central Palace by Outboard Motors Corporation, Milwaukee, builders of Evinrude and Elto outboard motors.

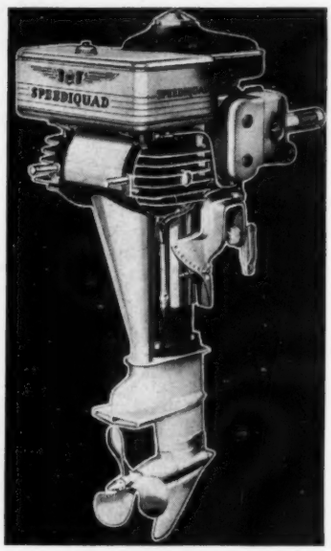
This "Hooded Power" is the enclosing of the entire outboard motor power head under an aluminum covering that completely protects carburetor, wiring and spark plugs from the weather, and guards them as well against rough handling. Only two controls and a primer button are in evidence. The effect is as striking as that secured in modern motor car design, with its use of engine-hood and radiator-grill combinations. Naturally, this new power plant interpretation blends beautifully with the graceful, sweeping lines and rich finish of any boat.

Two entirely new models in both the new 1934 Evinrude and Elto lines present this sensational improvement in outboard appearance and operating satisfaction. One is a 42-pound twin-cylinder motor developing 5½ N.O.A. certified brake horsepower at 4000 r.p.m. The other is a new 4-cylinder model weighing only 55 pounds and developing 9.2 N.O.A. certified brake horsepower at 4000 revs. The last named is the lowest priced, most portable 4-cylinder outboard motor ever built. Both of these new motors are distinguished from their companions by the name "*Imperial*" and they are indeed de luxe interpretations.

The year 1934 marks the silver anniversary of outboard motoring. Twenty-five years ago, in 1909, Ole Evinrude invented the first successful outboard motor. Today, as president of Outboard Motors Corporation, he is not only one of the few founders of an important industry who has lived to see the attainment of world-wide recognition for the new business he launched, but he is also intensely active in his company and is a consistent contributor of new engineering improvements. So unique is Ole Evinrude's position as an inventor and manufacturer that one famous outdoor publisher and nine of America's leading suppliers of material have joined in a common message of congratulation — a 12-page "salute to Ole Evinrude" which appears in the Show issue of this publication.

Twelve models comprise the silver anniversary Elto (battery ignition) and Evinrude (magneto ignition) lines for 1934. From canoe to cruiser, there is no size or make of craft that cannot be efficiently and economically powered by some motor selected from the complete Elto or Evinrude lines.

Nine motors in each line are designed for service hull use. Lightest of these, only 29 pounds, is the Sport Single, developing 2.2 N.O.A. certified brake horsepower at 3500 revolutions. Mightiest of the service models is Speediquad, a 31.2 N.O.A. certified brake horsepower job that easily pushes heavy runabouts along at speeds of 30 miles-per-hour and up — obtainable as an electric starting motor if desired, whirling into smooth, 4-cylinder action at the swing of a tiny lever and generating current for lights, siren or horn as you go.



Largest service outboard, Evinrude and Elto Speediquad

What a contrast this is to the early days of the outboard and the original Evinrude "line" of 1909 — one model only; weight 65 pounds; 1½ horsepower; one cylinder; five miles an hour. Now, instead of 43 pounds per horsepower, there are service Eltos and Evinrudes that develop one horsepower on less than five pounds of weight, which shows an efficiency increase of almost 1000 per cent over accomplishments of 25 years ago.

Besides the nine service models, there are three Evinrude and Elto racing motors which have thrilled thousands of spectators at speed regattas all over the world. A mile-a-minute is now an outboard motor achievement of the past; yet while youthful America has pointed at that goal for years, to have attained it has not cost the sport fewer followers or any loss of enthusiasm.

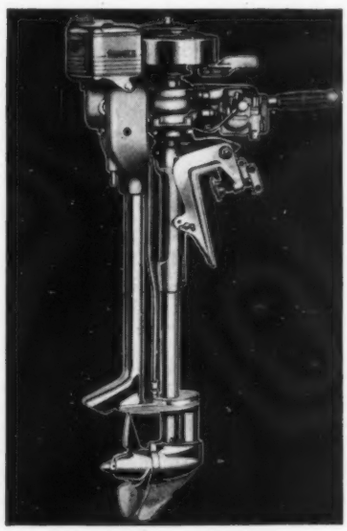
In addition to Speeditwin and "460," the two large veteran racers, there is also Midget. This tiny, low-priced outboard weighs only 37 pounds. On a 100-pound boat Midget made a speed of better than 25 miles an hour last season, a performance very likely to be bettered as boat weights in this class are reduced.

This particular motor, introduced for the first time in 1933, is expected to continue its appeal to a younger group of boys and girls. Its low cost puts it within easy reach of many who want a second motor for speed thrills, local competition or official regatta engagements where a motor of this size has proved the best with which to develop driving skill.

Completing the Elto and Evinrude lines is an all-electric model weighing 60 pounds, and capable of speeds up to four miles an hour. On boats for lagoons, or on children's play boats and dinghies, this model finds much favor, for silent power is at one's command by merely throwing a switch.

To the casual boatman the choice of the correct outboard seems to be more difficult than the selection of a car of the right horsepower. Seldom is any make of car offered with a choice of more than two sizes of power plants, whereas every outboard motor means a different horsepower. That is why Outboard Motors Corporation's useful chart (obtainable at the Show) has proved so popular with thousands of sportsmen and boatmen. At a glance, it shows relative horsepower, weights, types of boats suitable, speed range and prices.

Ordinary practice puts the two cylinders of a twin *opposite* one another, and in both cylinders an explosion takes place at the same time. "Four-like firing" doubles the number of power impulses by firing each cylinder *separately* — 1,2,1,2,1,2 —



Twenty-nine pounds of power, the Evinrude and Elto Sport Single

giving exactly the firing rhythm of a four. This means a new smoothness and flexibility with steadier, lower trolling speeds. This "fires-like-a-four" principle is employed in the new Elto and Evinrude Lightwin Imperial model which also features "Hooded Power." To make smoothness *doubly* smooth, the power head of both the Imperial Lightwin and Imperial Lightfour are floated in new-type rubber mountings which insulate both the steering handle and boat.

Another innovation of great importance to smoothness and quietness of operation is the use of spiral bevel gear drive on the Imperial Lightwin and Lightfour. This principle of power transmission has proved superior in other fields, notably trucks and passenger cars. Now, for the first time, it is adapted to outboard use.

This year, also, manual starting has been infinitely improved by the perfection of a durable steel-cable Simplex starter, obtainable for the Imperial models. There is no rope to find or wind. Instead, a comfortable handgrip is always ready which automatically reels back to starting position after spinning the motor for a start.

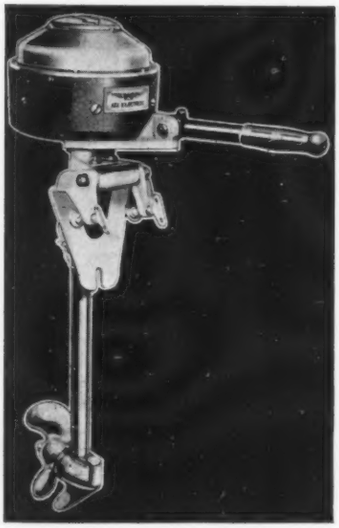
Every motor that Evinrude and Elto build is now furnished with under-water silencing as standard equipment. Exhaust fumes and noise are led downward into the wake itself, where they are drowned — to the comfort of those ashore as well as those in the boat.

A product of the speed regattas, and first introduced on Elto and Evinrude racing motors, the Rotary Disc Valve is now a standard feature on all models. It is simplicity itself, being an integral part of the crankshaft and cannot, therefore, get out of time, never needs adjustment and is wear-proof. More than any other single discovery, this invention accounts for the great power per pound available in Evinrude and Elto outboards.

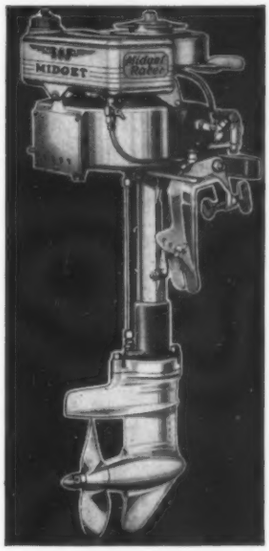
In addition to the many epochal engineering improvements discussed above, there are other interesting Elto and Evinrude features that appear here and there, depending upon the service each motor is required to render. Among these may be mentioned the following:

Automatic Air Valve; Adjustable Propeller Depth; Propeller Protection Clutch; Full Reversing Feature; Flash Start Primer; Compression Release, and Spring Cushioned Steering.

Four models in the Elto and Evinrude lines are obtainable with Outboard Motors Corporation's powerful, exclusive 12-volt electric starting, viz.: Fleetwin 8.5 h.p., Sportfour 16.2 h.p., Speeditwin 21.1 h.p. and Speediquad 31.2 h.p. Starting is as easy and simple as car starting, the movement of a small lever doing the trick. All parts of the starter-generator unit are encased in a compact, streamlined metal housing that keeps out all moisture and adds to motor beauty. An auto-type ammeter and combination ignition lock and switch are mounted on the dash; likewise, a separate switch for charging the battery at a high or low rate.



The noiseless Evinrude and Elto All Electric



The new Midget Racer, by Evinrude and Elto

Every Evinrude and Elto horsepower is "N.O.A. Certified." This means that every horsepower is the actual, scientifically measured power that these motors will produce in average service use. All tests for certified horsepower are conducted by disinterested engineers of the Pittsburgh Testing Laboratory in conformance with uniform procedure established by the National Outboard Association. Motors are run on a dynamometer which measures horsepower exactly. Ratings are taken at motor speeds which are developed in average service use, meaning that horsepowers are not *peak*, but are conservative.

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Caille Outboards

THE Caille Motor Co., of Detroit, are showing an augmented line of Caille Outboards, running in size from the

The new Evinrude and Elto Lightwin Imperial

Model 88, a single-cylinder engine of 4½ h.p., up to a big Class C Twin developing 23 h.p. In all, nine models are shown, four of which are equipped with the famous Caille Gear Shift Control, which is foremost among the many sterling improvements made by Caille in the outboard field over a period of years.

Here is the complete Caille line:

Model 88, single cylinder, utility model, 4.44 h.p., bore 2¼", stroke 1¾", weight 34 lbs.

Model 109, single cylinder, gear shift model, 4.44 h.p., bore 2¼", stroke 1¾", weight 34 lbs.

Model 129, Sport model twin, Class A, 10 h.p., bore 2¼", stroke 1¾".

Model 144, Advance twin, Class A, 10.09 h.p., bore 2¼", stroke 1¾".

Model 169, Gear Shift twin, Class A, 10.09 h.p., bore 2¼", stroke 1¾".

Model 197, De Luxe twin, Class B, 16.11 h.p., bore 2½", stroke 2".

Model 232, Gear Shift twin, Class B, 16.11 h.p., bore 2½", stroke 2".

Model 249, Super-twin, Class C, 23 h.p., bore 2¾", stroke 2½".

Model 296, Gear Shift twin, Class C, 23 h.p., bore 2¾", stroke 2½".

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Don't Miss Tiebout

AS USUAL, W. and J. Tiebout, the well-known, long-established firm which deals in marine hardware and accessories, has an exhibit worthy of their name and reputation. Many and various are the items which will interest you, whether you are a power boatman or a windjammer. Besides showing a big bunch of Columbian propellers, for which Tiebout is New York distributor, there is the Cunningham Electric Whistle — a compact and efficient outfit at a reasonable price. And a full line of A-C spark plugs, to say nothing of a fine line of special fittings for Star boats, Snipes, and other small craft.

Johnson Sea Horses Feature Co-Pilot

THE seven sturdy Johnson Sea Horses for 1934 are attractively displayed in the same space on the mezzanine that they occupied last year.

"Wonder why they didn't do that before?" is going to be the exclamation of more than one showgoer who stops to examine the newly patented Co-Pilot on the Sea Horse Single Model J-70, the new Light Twin Model F-70, and the latest alternate-firing Models A-70 and K-70. The Co-Pilot is a little device that takes hold of the steering handle when the helmsman lets go to light his pipe or get his fishing tackle ready. It keeps the motor in one position and prevents any turning action until the steering handle is again taken hold of and moved.

Then there is a new rubber-mounted steering handle on these small models, to add its extra bit of comfort to steering.

In these four smaller Sea Horses there is also the propeller protection clutch that gives the owner thorough assurance when navigating shallow, rock-infested waters.

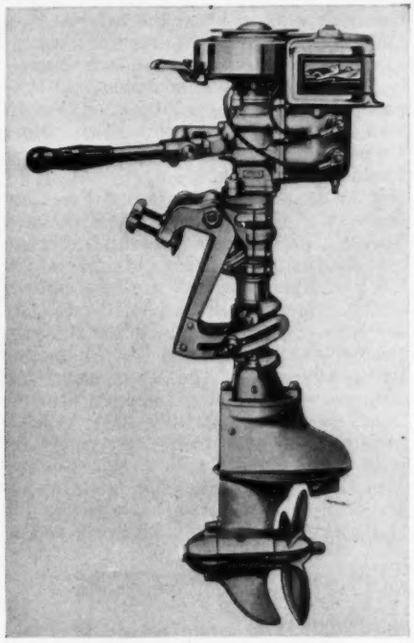
Complete "back-up-ability" goes with these same Sea Horses in the complete-reverse feature which enables the boat to be driven forward or backward without the necessity of stopping the motor.

For 1934 Johnson offers three groups of motors.

Group I includes the new Sea Horse Single, Model J-70, and the new Sea Horse Light Twin, Model F-70, both light-weight, with patented Co-Pilot, reverse, plunger cooling water pump, propeller protection clutch, and other features.

Group II includes the alternate firing Models A-70 and K-70. They are more powerful, faster, quiet, and have reverse, Co-Pilot, rotary valve, synchro-control, underwater exhaust, and many other worth-while features of performance and comfort. They are the latest edition of Sea Horse models that have proved so very popular in recent years.

Group III constitutes the larger motors, Models S-70, P-70 and V-70, built to a different plan, because they do a different job. They are the most powerful in the Sea Horse line — sturdy, fast, and long-lived motors.

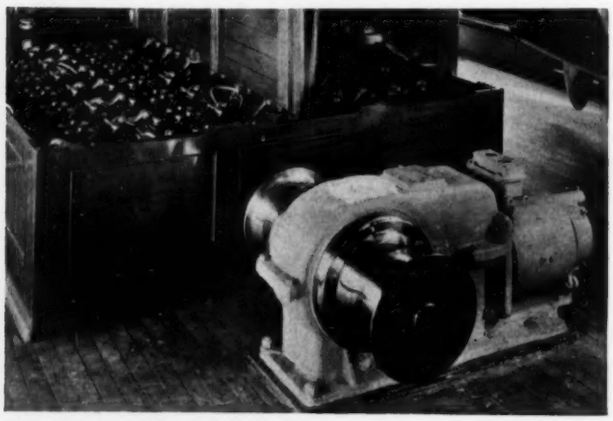


The 9 h.p. Johnson Sea Horse with new Co-Pilot, or self-steering device

Rustless Wire for Yachtsman and Fisherman

YOUR yachtsman, whether of sail or power, always has to battle against rust and corrosion in the iron or steel work aboard his boat. Therefore, the rustless steel products of the Hazard Wire Rope Company, Wilkes-Barre, Pa., which are exhibited in Booth 96 on the third floor, will arouse more than the usual interest. The chief product which this manufacturer shows is a line of stainless steel rope, marketed under the name "Korodless," for standing and running rigging, steering cables, anchor rodes, etc. An interesting feature of this display are samples of this product made up in splices, loops and rope attachments. Also, various deck fittings and other stainless steel equipment for the boat are featured.

For the sport fisherman various types of fishing leaders are shown, made up from Korodless wire and rope, which successfully withstand the ravages of rust.



A 56-cell, 115-volt Exide Ironclad Marine battery which is used with the Exide marine floating battery system

Monel Shafts and Wheels

THE International Nickel Co., makers of Monel Metal, are showing a fine line of gadgets made of this remarkable alloy. Included are Monel shafts, wheels, bolts, nails, screws, wire rope, and so forth. The strength and corrosion-resisting qualities of Monel are pretty well known, but if they are unfamiliar to you, ask one of the experts at the Monel booth, and get the "low-down" on the subject. Two of the most interesting items to be seen are the Monel shaft and wheel used on the famous flyer *El Lagarto* the past two seasons.

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New Jersey Paints

THE well-known line of New Jersey Paints are exhibited on the third floor by the New Jersey Paint Works, of Jersey City. New Jersey Copper Paints have been standard for years, and need no introduction. Then there is New Jersey Yacht Sea Green, highly anti-fouling, glossy, hard and durable; and New Jersey Copper Bronze Composition, Engine Enamels, and other varieties. Complete your paint education by a visit to the New Jersey booth.

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For Eradicating Electrolysis

ONE of the most interesting of the many new devices at this year's Show is, undoubtedly, a Marine Electrolysis Eliminator, exhibited by the Smith-Meeker Engineering Co. After five years of severe testing the exhibitors state that this device, a Seattle invention, has been able to eradicate every case of electrolysis it has been tried on, no matter how difficult. A typical installation of this equipment is on display.

One of the most mystifying and irritating problems of the boat owner is this matter of corrosion due to electrolysis, caused by the action of salt water on different metals that enter into a boat's construction. This corrosion has cost many dollars in replacements, and necessitated frequent haul-outs. Some sure method of correcting the evil has long been needed by the yacht owner. A number of yachts have been equipped with this new device and have found it most satisfactory.

In addition to this equipment, Smith-Meeker also exhibit for the first time air conditioning equipment as manufactured by Carrier-Brunswick International. This equipment is not new this year, having been successfully installed on several yachts in 1932, where it proved its value in adding to the comfort of those aboard them. The same firm also shows American Engineering equipment, Universal generators, Homelite generators, pumps, Hydroil purifiers, and last, but not least, the well-known Edison storage battery, which is used so extensively on many power-driven yachts and auxiliaries.

A 16-foot outboard-powered Century Sea Maid exhibited by Armstrong & Galbraith

Exide Batteries

THE Electric Storage Battery Company, of Philadelphia, is on the third floor with an instructive and interesting exhibit of Exide batteries.

Among the things to be learned at this exhibit are the advantages of the Exide marine floating battery system. A complete system including switchboard, motor generating set and batteries will be operated for demonstration. The exhibit shows exactly how this highly efficient system of battery and auxiliary engine operation works, and what benefits can be expected through its use aboard your boat. This system has been highly successful in hundreds of installations aboard both yachts and all classes of commercial vessels. It is well worth seeing.

Cut-away cells of many types and sizes of batteries will show exactly how Exide Marine batteries are made. A full line of Exide-Ironclad batteries from the size used aboard liners and large yachts to those used aboard small pleasure boats are on display.

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Fire on a Boat Now Extinguishes Itself

ONE of the new accessories at the Motor Boat Show is the Lux-O-Matic Fire Extinguishing System recently developed by Walter Kidde & Company. This is an automatic carbon dioxide system — a great step forward in yacht fire protection. It is the only extinguisher that is operated automatically by explosions and it is claimed for it that it will put out the most severe fires entirely without human aid.

The Lux-O-Matic System is different from other automatic devices. It is said to be the first automatic system to be approved by the Underwriters' Laboratories for use on boats. The Lux-O-Matic System is completely non-electric. A dead battery or a broken wire cannot make the system inoperative, nor can a short circuit cause premature operation.

The system operates upon the principle that air expands when heated. With this system, a small metal air chamber, known as the heat detector, is installed overhead in the protected engine space on the underside of the deck, and connected by a small copper tube with the valve on the cylinder containing the carbon dioxide gas. When normal changes in temperature occur, as from the overheating of the engine, or from the sun beating down on the deck, the pressure in the detector is relieved by a small vent. But when fire occurs, the change in temperature is so rapid that the air cannot escape fast enough through the vent and the resulting pressure is transmitted to the valve, causing operation. Even the small heat from a candle, held below the detector, will discharge the system within a few seconds. Thus, with this system, a boat is protected 24 hours every day, in service or in storage.

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Goodrich Cutless Bearings

A UNIQUE display by Lucian Q. Moffitt, Inc., national distributors of the well known Goodrich Cutless Rubber Bearings, shows a tank filled with water containing large quantities of sand which is constantly being stirred up by a propeller and circulated through the Cutless Bearings of the propeller shaft. Through the glass walls of the tank, visitors at the Show are able to see the sand pass through the bearings, and learn why sand and other abrasive material does not cut the shaft or bearing. It is a convincing demonstration of the importance of rubber as applied to propeller shaft bearings.

The back wall of this exhibit shows a painting of a unique arrangement of propellers and rudders of the *Lenore II*, from designs of Thomas D. Bowes, M.E. The struts of this installation are all single arm, of airfoil shape, fitted with Cutless Rubber Bearings. As the propellers are set ahead of the after struts there is no interference with the flow of water to the wheels. This arrangement acts as a vane to take the twist out of the thrust column of water sent astern from the propellers.

Also on display is a line of Cutless Bearings of various sizes and types, including one for the 11¼" shafts for the large Coast Guard vessels now building.

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Edward Smith Paint and Service

EDWARD SMITH & CO., manufacturers of the well-known "Cup Defender Finishes" have participated in every Show for the last 20 years or more and this year this century-old firm will, besides displaying its products, place more emphasis than ever before on its service department for boat owners, which is proving to be increasingly helpful and popular. Correspondence from boat owners with individual paint prob-

The Moffitt exhibit to demonstrate the operation of Goodrich Cutless bearings

lems has been personally handled by Samuel R. Mays, Vice-President of the Company, who will continue to head the Service Department.

An interesting series of leaflets which cover the subject of boat painting from practically every angle will be furnished upon request at the booth and a representative with practical experience will always be on hand to discuss with owners the problems of painting boats.

Marine Equipment by Wilcox-Crittenden

WHILE Wilcox, Crittenden & Co., makers of marine hardware, Middletown, Conn., have always made a practice of keeping their products "up to the minute," the company's line has had an especially complete overhaul for 1934, due to the new and exacting point of view which the boat owner is expected to adopt when he buys his new equipment this year.

One of the new items introduced by Wilcox-Crittenden for 1934 and exhibited at the Motor Boat Show is a new type Anchor Deck Winch designed to break out and lift anchors up to 200 pounds. The long operating lever takes the back strain out of heaving. A new feature of the brake gives easy and smooth control in stopping the outrun of chain.

Another new Wilcox-Crittenden item is a positive shut-off for the gasoline line. This can be installed at any point in the line and is particularly adaptable for installation at the gas tank. It is operated by means of a Bowden Wire Control which may be placed at any point on the boat. This means that the shut-off can be controlled from the dash, and one can leave his boat knowing that there will be no chance for leakage of gasoline during his absence.

The new and improved Bausch and Lomb marine binocular. Power, seven, and field, 35 millimeters

To port, a stern light with door to bulb; to starboard, a rugged anchor light, both by Wilcox-Crittenden

Many other items are also on display at the Wilcox-Crittenden booth. Have you ever had trouble with your reefing gear? Then look at the new Roller Reefing Gear which will be on display for the first time. Has the problem of re-bulbing your running lights ever proved exasperating? This is solved nicely by the hinged front which is now a feature of the "Hurricane Tested" running lights. There are also plenty of other items of equipment which will make the visitor linger at this booth.

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Columbian Propellers

FOR many years Columbian Wheels have been used successfully by almost every type and size of yacht. At the Show you can see a complete line of these wheels, in both two- and three-bladed models, and confer with Columbian experts as to the exact wheel which will give the most speed and efficiency on your own boat. Besides their comprehensive line of wheels, the Columbian Bronze Corporation, makers of Columbian wheels, also are well known as makers of bronze rudders, shoes, struts, water pumps, shafting, shaft logs, stuffing boxes, etc.

Woolsey's Paints

THE exhibit of the C. A. Woolsey Paint & Color Co., long-established makers of fine marine paints, is of very distinct educational value, the main exhibit being that of a large number of test panels, which were painted with numerous different bottom paints, and then submerged in various localities for long periods. The effect of teredos and other marine borers is clearly apparent, as is the growth of grass and barnacles. It is easy to see what paint protects the bottom of a boat, and what paint doesn't.

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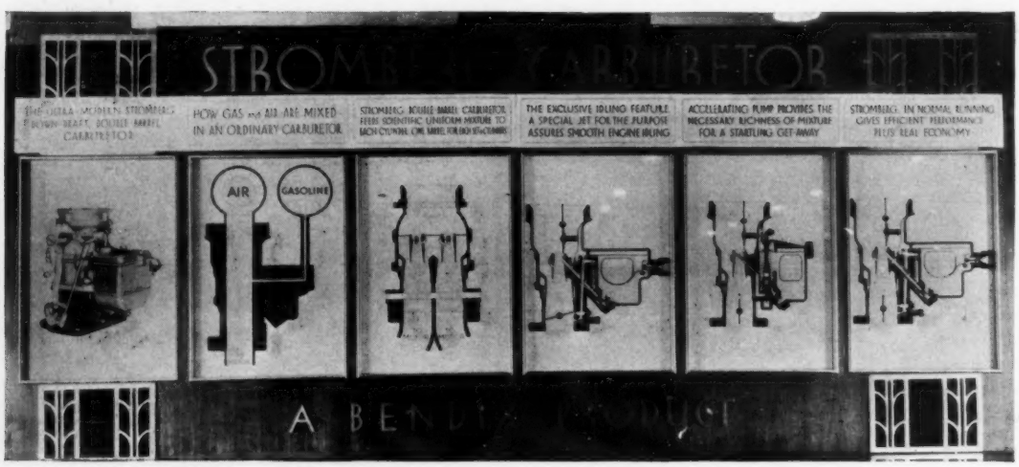
Topping Brothers

TOPPING BROTHERS, for many years one of the largest marine hardware supply houses and distributors in the New York area, have in their exhibit a full line of marine accessories.

There is a complete display of Goodrich Cutless rubber bearings of all sizes. Monel metal shafts are distributed by Topping, and an interesting display of these shafts may be seen at their booth, along with many other products of well-known marine manufacturers.

Topping Bros. have been appointed exclusive marine distributors for Norwalk Lock Co., of Norwalk, Conn., and are displaying a complete line of their yacht and joiner hardware.

Of interest to owners and builders of medium-sized craft is the introduction of a new, water-cooled electric lighting plant. There are two units at present, one developing 400 watts and the other 800.



The attractive Bendix Stromberg carburetor exhibit makes clever use of six lighted and colored panels to illustrate the features of their product

This Car Wood runabout steps along at 43 miles an hour with a 200 h.p. Scripps engine supplying the power

Of Interest to the Showgoer

The 1934 Dee Wite Fleet

ONE of the most interesting runabout and cruiser fleets for 1934 is that of Dee Wite, Inc., of Detroit, Michigan. The new fleet will include six Lodge Custom Torpedoes, ranging in length from 23 to 40 feet; in seating capacity, from 4 to 15 place; in horsepower, from 135 to 1000; and in speed, from 44 to 73 m.p.h. The 23-foot model will be powered with a Lodge motor; the next three longer models with Scripps motors; and the last two with Liberty motors.

In the standard runabout division, Dee Wite is presenting four 19-foot models, seating six passengers. The first two are Chrysler-powered, the third, Gray, and the fourth Lodge. Horsepower will range from 68 to 100 and speed from 32 to 36 m.p.h.

A 22-foot Dee Wite Chrysler special deLuxe runabout will also be offered, seating ten. Powered with a 125 h.p. Chrysler motor, a speed of 36 m.p.h. is expected.

Eight Dee Wite deLuxe runabouts will complete the runabout selection. The first of these will be 19 feet in length; the next two, 22 feet; the next two, 25 feet; and the last, 28 feet. Lodge and Scripps motors will be used. Seating capacity will be from 8 to 12; horsepower from 100 to 335; and speed from 36 to 47 m.p.h.

The popular low-priced Dee Wite Cruiser will be continued in three models, all 24 feet long, with daytime accommodations for 16. Speed will range from 12 to 18 m.p.h. and power from 50 to 85, with Lodge and Chrysler motors.

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Koven Tanks

AN INTERESTING and graphic exhibit of the construction of tanks and sinks for marine purposes is being shown by L. O. Koven and Brothers, Inc., a name of long standing and high reputation in the marine field.

Included in their exhibit are galvanized, copper, and stainless steel tanks, together with a basin and tank made of Monel metal. In addition, there is a fabricated water-cooled exhaust manifold and a model tank to show how Koven builds them to conform to the shape of the hull. Altogether the exhibit has a decidedly neat and clean-cut appearance.

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Marblehead Boats

THE Marblehead Boat Corporation, of Biddeford, Maine, are building three attractive stock craft for 1934 — the 30-foot Marblehead Junior, the 30-foot Sportster, and the 35-foot Bridge Deck Cruiser.

The Marblehead Junior is described and illustrated in the plan section of this number of YACHTING. The Sportster is a duplicate hull to the Junior, but with an entirely different layout. She is a day

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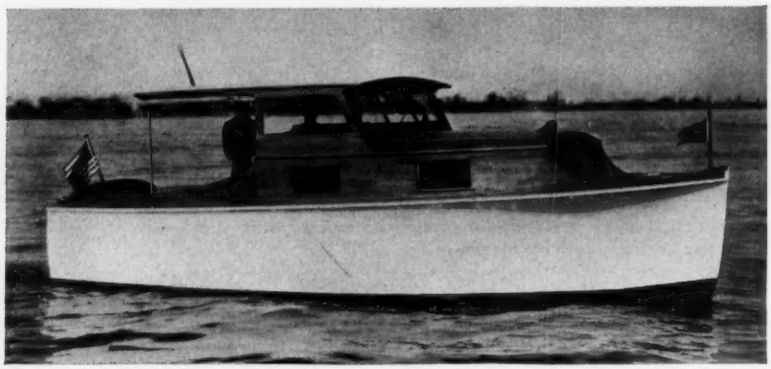
On the way to the Show about twenty years ago. A 43-foot Consolidated cruiser

boat, with very large cockpit, part of which is covered by a standing top. The cabin forward contains a toilet room, ice box, stove space, shelf, etc. This little craft is exceptionally well adapted for day runs and fishing. She does 12 miles an hour with a 45 h.p. Buda motor, or may be equipped with a 57 h.p. Buda for 15-mile-an-hour speed.

The 35-foot Bridge Deck Cruiser is a very handsome craft, and inspection proves she has an unusual amount of room both on deck and down below.



A 24-foot Dee Wite cruiser powered with a 50 h.p. Lodge motor

Forward of a good after cockpit is an enclosed bridge shelter, where are installed chairs, helmsman's seat, and a lounge seat easily and quickly convertible into a berth at night. A fine galley is located at the foot of the companion steps, with toilet room opposite, while adjoining is the main cabin with two upper and two lower berths, and a wealth of lockers, shelves, drawers, etc.

Three power plants are available for installation in the 35-footer. With a 100 h.p. Buda she will cruise at 16 to 17 miles an hour. With a Sterling Petrel she will step out at a 22-mile clip. With a Buda Diesel of 85 h.p. a speed of 15 miles an hour may be maintained.

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A New Position Finder

A NEW and practical piloting instrument is being offered to the boating world at the Show by the E. J. Willis Co., New York. This is the Ford-Willis Position Finder, invented by F. R. Ford, Jr., of the engineering firm of Ford, Bacon & Davis, Inc. This finder can best be described as the combination of a pelorus and a periscope, mounted in a thoroughly practical manner. The U. S. Government periscope which is used has 7½-power lenses, giving long range with a wide field. It permits permanent installation through the deckhouse roof or shelter top so that the helmsman or navigator can obtain an unobstructed view around the horizon at any moment. Positive bearings are given by the pelorus feature and thus accurate positions can be plotted. Sighting is practically unhampered by the motion of the boat. The device is simple to operate, is sturdily constructed and low in cost.

Tarr & Wonson to Make Topside Paints

TARR & WONSON, LTD. of Gloucester, Mass., have long been known for anti-fouling copper bottom paint. Now comes the announcement that this company is offering the trade, in addition, a complete line of topside paints.

Boat owners who have, for years, applied Tarr & Wonson's brown copper paint or red racing compound to the bottoms of their boats, can now paint the whole boat with paint bearing the reliable Tarr & Wonson label. They are offering a high luster, durable deck paint; three yacht whites, semi-gloss, gloss and flat; boot-topping, in bright red and bright green; and mast and boom buff. Wonson Spar Varnish, a glossy yacht black engine enamel, and aluminum paint complete the present new line.

The 30-foot Marblehead Junior, built by the Marblehead Boat Corporation, of Biddeford, Maine

Eldridge Tide Book Now Available

THE Eldridge Tide and Pilot Book for 1934 is now ready for distribution by the publishers, Kelvin and Wilfrid O. White, 112 State Street, Boston. As many yachtsmen know, this is invaluable to anyone who cruises along the New England Coast, and especially to those who enter long distance races in this territory, inasmuch as this handbook gives not only accurate tide tables, but invaluable data on currents which is to be found nowhere else. There is a wealth of other nautical material included in this valuable book, which should be aboard every cruising yacht on the Eastern seaboard.

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Sparkman & Stephens Open Boston Office

SPARKMAN & STEPHENS, naval architects and yacht brokers of 11 East 44th Street, New York City, announce the opening of an office at 148 State Street, Boston, in charge of F. Emmons Alexander and Richard W. Pratt. Mr. Alexander has been in charge of Sparkman & Stephens' Providence office for the past two years. Mr. Pratt has been active in New England yachting affairs for a number of years, is a graduate of M.I.T. and a member of the Hingham Yacht Club.

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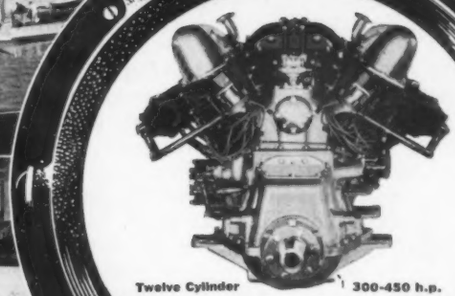
Scintilla Magnetos

ANYONE interested in marine motors should be interested in the exhibit of the Scintilla Magneto Co. on the third floor. First, there is the more or less familiar Bendix Magneto, announced at the 1933 Show. Then there is a mighty interesting newcomer — the Scintilla Vertex Magneto, now shown for the first time. The Vertex is a new Scintilla product, designed primarily for engines which have no provision for a magneto — it is installed on the usual timer mounting of the engine, and is driven in the same manner as the battery ignition timer which it replaces.

Many New Additions to Perko Products

THE Perkins Marine Lamp Corp., of Brooklyn, never seem to get tired of adding new items or improving their line in some way or another. In addition to their regular line of eight hundred marine fittings, they have made an arrangement with the Columbian Bronze Corp., whereby they will act as distributors of Columbian propellers and other bronze marine specialties. With Columbian line added to Perko's, the exhibit is complete.

A MOTOR FOR EVERY BOAT



Twelve Cylinder **300-450 h.p.**

A medium duty 300 h.p. valve-in-head "12" at 1500 to 1800 r.p.m.—a high speed 450 h.p. model at 1800 to 2200 r.p.m. For large express cruisers and runabouts. Displacement, 1414 cubic inches. Bore 5", stroke 6".

Kermath offers a new cooperative sales and service plan to boat builders and marine dealers—a new advisory service to boat owners. Write for 1934 sales literature—new prices.

KERMATH MANUFACTURING COMPANY
5893 Commonwealth Avenue, Detroit, Michigan

KERMATH

A KERMATH ALWAYS RUNS

TWO TO TWELVE CYLINDERS

8 TO 450 HORSEPOWER

A Real International Class

(*Continued from page 49*)

and at the next mark we were only half a minute ahead. During the next stern chase, after the jibe, she still closed up, but we reached the last mark clear ahead. She tried to force a passage at this mark and fouled us, after which she drew ahead and won by 12 seconds. She was, however, disqualified, so *Flica* took the first prize and *Figaro IV* second, being one minute and 42 seconds after *Vema*.

I have described this first race in some detail as it was indicative of the keenness of the competition in the Twelve-Metre Class throughout the regatta at Hankö. In the next event *Vema III* was once more disqualified for a port tack start that brought her into trouble with the rest of the class on the starboard tack. *Figaro IV* won this event with *Flica* second. The order of these two "Twelves" was reversed in the third race, *Vema* taking third place. In this race one of the old gaff-rigged Twelve-Metres, the *Vineta*, not only won in her class but actually sailed the course over a minute faster than the first of the newer "Twelves." In the fourth race *Vema III* won rather easily in fluky wind conditions, beating *Flica* by over five minutes. But *Flica* had fouled *Figaro IV* in a luffing match and was disqualified. The last race of the five-day series was sailed in a light, uncertain breeze and was won by the Norwegian *Hei II* by a margin of 27 minutes from the second boat, *Doris*. *Vema* was third.

Every evening after the racing the King presented the winners with their prizes, and every helmsman was presented with a silver medal commemorating the fiftieth anniversary of the K. N. S. On the last evening the series' winners were awarded their prizes, *Figaro IV* receiving the King's Cup in the Twelve-Metre Class with 319.8 points, and *Flica* getting the Magda Cup with 308.8.

From Hankö the racing fleet went to Swedish waters where five races were sailed under the auspices of the Royal Gothenberg and the Aeolis Yacht Clubs. The Twelve-Metre fleet was rather thinned out as several of the yachts stayed in Norway and only *Vema III*, *Morwenna*, *Doris* and *Flica* proceeded to the new racing centers. In these five races, *Vema III* won the first, a passage race to the Island of Marstrand, while *Flica* took the next four, *Vema* and *Doris* dividing the second and third places.

After the last event the whole squadron left for Copenhagen, the *Morwenna* and *Vema III* in tow of Mr. Vetlesen's schooner *Vema*, while Mr. Fairey's *Evadne* had the *Doris* and *Flica* following behind her at the end of a towline.

Arriving at Copenhagen for the first two days' racing of the Annual Sound Week of the Royal Danish Yacht Club, the four "Twelves" were hauled out at the dockyard to have their bottoms scrubbed and polished. This presented an opportunity for comparing the underbodies of these racing yachts. A fifth competitor in the class showed up here, the *Princess Svanevit*, a Swedish "Twelve" designed by the late Gustaf Estlander, and built in 1930.

The races started off the harbor of the fishing village of Skowsbored, a few miles north of Copenhagen. The wind was light for both the races. *Morwenna* took the first event, after a long drift, during which the yachts were almost becalmed at times. *Flica* won the next race with a lead of some two minutes over *Vema*.

Unfortunately, the visiting Twelve-Metres had to leave after the first two days of racing as they had engagements to fill at Deauville and Cowes. So, taking

"Here's a tip for any old ship," says Bon Ami Chick the Sailor...

Keep a package of Bon Ami (the well-known household cleanser) on your boat all the time. For Bon Ami is a handy "mate" that will help you do a lot of jobs.

It cleans and freshens paint that has become dirty, dulled or soiled.

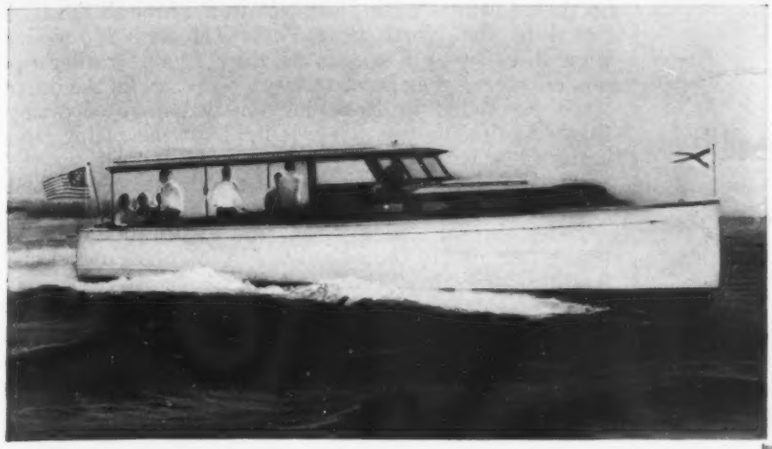
It keeps the galley and the lavatory spotless and sanitary.

It puts a fine polish on the brasswork.

It makes the windshield, windows and other glass parts glistening clear!

You can buy Bon Ami either in *Cake* or *Powder* form—whichever you may prefer.

KEEP YOUR BOAT CLEAN WITH BON AMI



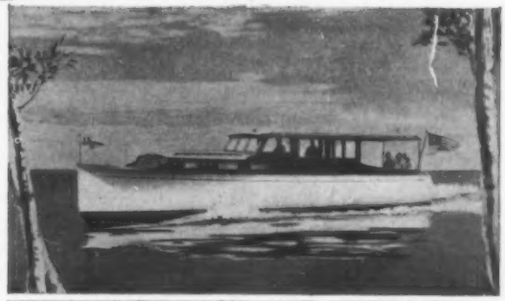
THE 1934 Richardson fleet has been inspected from stem to stern, from keel to canopy, from port to starboard, inside and out, by the thousands of experienced yachtsmen attending the 29th Annual Motor Boat Show. Everyone is more than enthusiastic in his praise and approval of these newer, bigger, lower priced Richardsons.

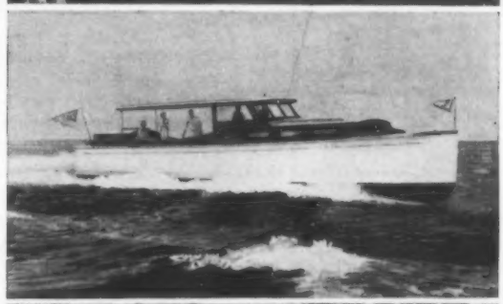
The exceptional headroom, the increased cockpit space; the comfortable deck houses and spacious cabins; the sound proofed motor compartment; the new interior and exterior beauty and hundreds of other features of the 1934 Cruisabouts have been enthusiastically praised and approved by the men who know yachts and yacht value.

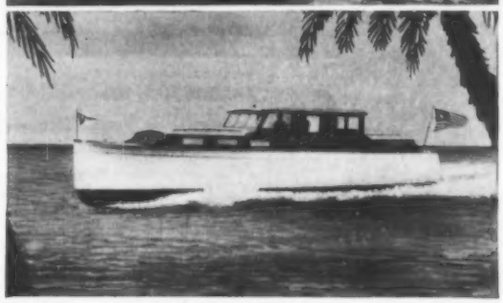
With greater length, new beauty, new interior arrangements that provide the maximum of space in the cabin and on the deck and new low prices, the 28 ft. Richardson Jrs. also received their share of approval.

Richardson Little Giant, the new 24 ft. cruiser that places yachting within the reach of everyone, was praised and approved by all. This new Richardson, the outstanding value at the show, has many improvements over its predecessor with its additional cockpit and cabin space and added conveniences and equipment.

If you were not fortunate enough to attend the Motor Boat Show be sure to see these new Richardsons at Bruns-Kimball & Co., 5th Ave. & 15th St., New York City; Flood Gate Motor Boat Sales, 14th & Water Sts., Washington, D. C.; Walter H. Moreton Corp., 1043 Commonwealth Ave., Boston, Mass.; Hill-Manning Boat Corp., Tonawanda Island, N. Tonawanda, N. Y.; Stadium Yacht Basin, Foot of West Third St., Cleveland, Ohio; A. M. Deering, 1454 Builders Bldg., Chicago, Illinois; S. Sanford Levy, 606 Union Indemnity Bldg., New Orleans, La.; Henry I. Coleman, 9 Bay Street, West, Savannah, Georgia or write today for booklet "F-34" that will be mailed without cost or obligation to you.







NRA

RICHARDSON BOAT COMPANY, INC.
363 SWEENEY STREET NORTH TONAWANDA, NEW YORK

RICHARDSON

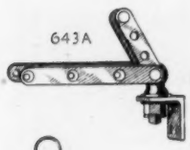
LITTLE GIANTS ▪ JUNIORS

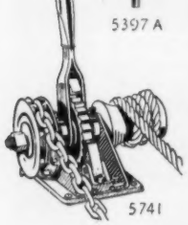
CRUISABOUTS

If it's "Sea Seasoned" it's SAFE

In times of stress it is something more than good fortune to have a boat equipped with WC "Sea Seasoned" quality fittings—it is prudence and foresight on the owner's part! Since the day of clipper ships, WC Dependable Fittings have contributed continuously to marine safety and economy, keeping always abreast of new developments, new lines and trends.

Pending publication of the 1934 WC catalogue, consult your regular WC dealer for any and all needs in marine hardware and reliable fittings.





A REPRESENTATIVE NEW WC SELECTION

Fig. 643A Small Boat Boom Fitting

Particularly adapted for "Snipes" and "Moths"; in plain brass, $2.25 each; in polished brass, $3 each. Other types for larger boats.

Fig. 19 "Hurricane Tested" Anchor Light

A tough rugged product that stays lit; built to withstand heavy service; polished brass, $5.00 each.

Fig. 28 "Hurricane Tested" Combination Light

Cast bronze with new hinged front for easy re-bulbing, cleaning or replacing lens; in polished brass, $11.50 each.

Fig. 5393E Galley Pump

With raised goose-neck spout which facilitates filling of deep pots or kettles; a special valve makes this pump really pump! In polished nickel silver, $10.50 each.

Fig. 8757G Deck Type or Bulkhead Throttle Control

Practical and positive; Bowden wire hook-up; for use on either Outboard or Cruiser types; plain brass finish, $3.50 each; polished brass, $5 each.

Fig. 5397A Basin or Lavatory Pump

With high spout; leak-proof valve; large capacity, nickel plated, $11.50 each.

Fig. 5741 Anchor Deck Winch

Hoists up to 200 lbs. easily, without back strain; light-weight, inexpensive and efficient. New design brake gives perfect control of chain speed at all times. As modern as hydraulic brakes on cars! Regularly equipped with wildcat for chain, and drum for rope.

Write for name of your nearest dealer

ESTABLISHED 1847

WILCOX, CRITTENDEN & COMPANY, INC.

10 South Main Street, Middletown, Conn.

up their towlines again, the fleet went through the Kiel Canal to the North Sea. *Vema III* and *Morwenna* went directly to England, as they needed rather extended overhauling before Cowes Week, while the other three proceeded to Deauville for two days of racing there. Again, the weather was light for the racing, and under these conditions *Flica* scored two more firsts, the Swedish and the French yachts each getting a second prize.

Later, during Cowes Week, and in the four races in the eastern end of the Solent which followed, one of the largest classes of "Twelves" ever assembled participated. Besides the five yachts arriving from Scandinavian waters, *Iyruna*, *Veronica*, *Zoraida* and *Zelita* took part in the racing. The last named was a new Fife boat that had not yet found herself, but she took one race during the week and has improved steadily since then. Of the remaining eight races *Iyruna* took one, *Princess Svanevit* one, and *Flica* the other six.

The last three weeks of the season were spent racing in the West Country, that is, off the English Channel ports of Dorsetshire and Devonshire. Most of the races were sailed in light to moderate breezes. The one day it blew was for the race in which T. O. M. Sopwith's *Shamrock V* was dismasted. Of seven starters in the Twelve-Metre Class this day only three finished. *Veronica* won, carrying full mainsail only as she crossed the finish line. *Zelita* was a close second, and *Doris*, finishing under a storm trysail, was third.

When *Flica* finished her last race of the season on August 31st, her winning flags for 1933 represented 27 first prizes, 10 second places and two thirds, in 45 starts, an unusually fine record, made in five different countries. It would be hard to get better international racing than in this fine class. At the moment, it looks as if there will be an international series between the "Twelves" in the United States next summer, as Great Britain has already challenged through the North American Yacht Racing Union.

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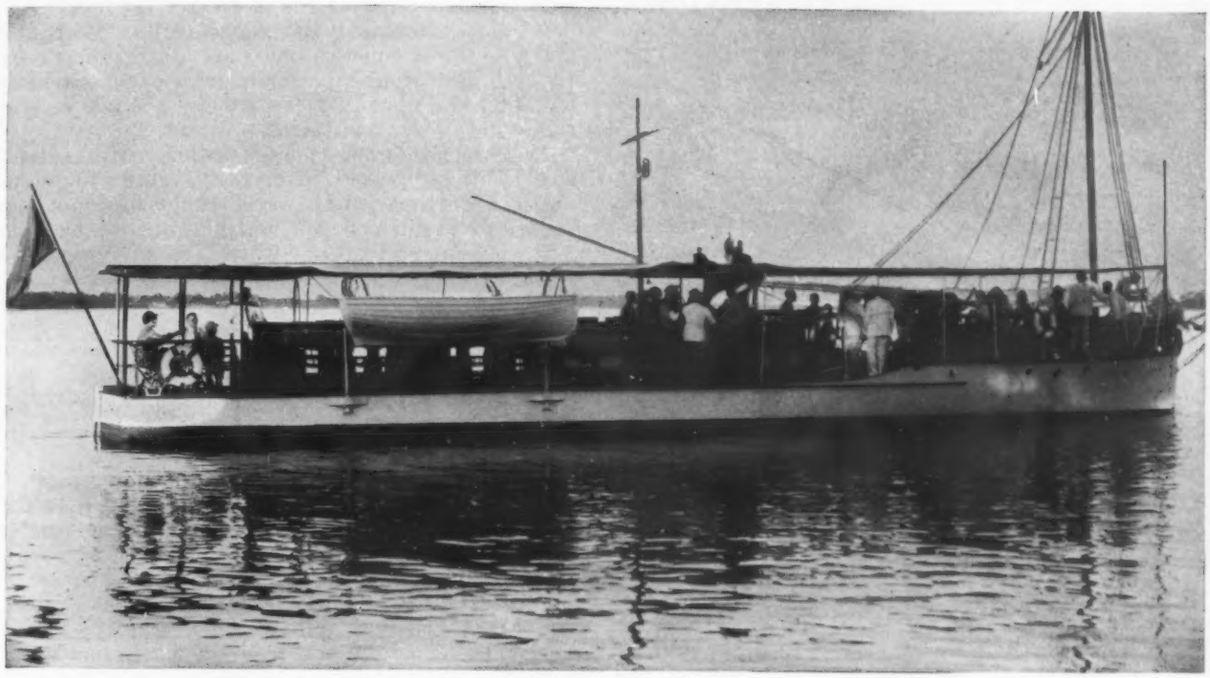
T. O. M. Sopwith

(*Continued from page 54*)

A notable feature of his racing is perfectly timed starting. In five out of six starts the ex-challenger would be over the line first and well away in the lead of the fleet. I have seen him make spectacular starts, and none more so than at Babbacombe, in half a gale. Probably his training as an airman has given him this quality of unerring judgment. On this particular occasion, at Babbacombe, he reached along the line at a great pace, heeling at an angle of forty-five degrees, and was over the line a few seconds after the starting gun boomed, running free with a fine lead. His judgment in timing a start is little short of uncanny. It was in this race that *Shamrock V* was dismasted, and but for his skilled hand at the helm accident and loss of life seemed inevitable. When the yacht was blown on her beam ends, Mr. Sopwith held her to her course until hit by the fatal squall which dismasted her. Even then, he steered her with such mastery that the mast and rigging fell almost at right angles to the yacht, so saving the crew from accident and the hull from damage.

Though the racing season of 1933 ended so unhappily for Mr. Sopwith, within a few days of *Shamrock's* fateful accident he gave Charles E. Nicholson a commission to design and build an all-steel Class J yacht like *Velsheda*, to be named *Endeavour*, which eventually became the next challenger for the Cup. From the time of his first handling of the *Shamrock*, it had been known that Sopwith nursed an ambition to try for the "old mug" in behalf of English yachtsmen.

"Absolutely No Corrosion or Vibration"



The yacht "Florence" operated under the jurisdiction of Sr. Luis E. Ferro, Consul General of Colombia in Ciudad Bolivar. This craft is used in passenger and mail service on the Meta River and is equipped with two Monel Metal Shafts of 2¼" diam. as well as Monel Metal propellers 22" x 18".

THAT'S COLOMBIAN CONSUL'S TRANSLATED DESCRIPTION OF THE FLORENCE'S

Monel Metal Shafts and Propellers

DOWN on the Rio Meta, tributary of the Orinoco, plies the "Florence".

Loaded with mail. Crowded with passengers. She puts in at all her ports of call with clocklike regularity.

In the steaming jungle country of eastern Colombia, only five degrees north of the Equator, repair yards are conspicuous by their absence. But little does that worry the master of the "Florence".

Superiority easy to see

She kicks the turbid waters of the Meta with twin propellers of Monel Metal. Drives them through two shafts of the same metal.

And if the nearest dry-dock is far over the horizon, what of it?

Señor Luis E. Ferro, Consul General of Colombia in Ciudad Bolivar, assures you that the Monel shafts and propellers of the "Florence" "visibly demonstrate their high corrosion resistance, much superior to metals previously used." Señor Ferro also testifies that after the Monel shafts were installed "vibration was noticeably reduced".

These qualities of Monel Metal are equally well-known to owners of private and public craft of all sorts nearer home ...from fishing boats to snooty sea going cruisers.

Monel is stiff, strong

Monel Metal shafts are stiff. They are *true* cylinders. They "wear in" to a mirror finish. All qualities that reduce whip and vibration.

Monel shafts are strong, too. They withstand jolts, such as those from driftwood, that would hopelessly spring a shaft of less sturdy material.

Monel Metal propellers partake of these same advantages. They cut through floating debris that would snap off blades of softer metal. And since Monel cannot rust, since it is stubbornly resistant even to the active corrosion of salt water, both propellers and shafts of Monel can be counted upon for a long and useful life. (Also to save their owner from many a costly lay-up.)

Send for literature on Monel Metal for boats: shafts, propellers, galley trim, hull fittings, fish holds. Write to

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York, N. Y.

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Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL METAL

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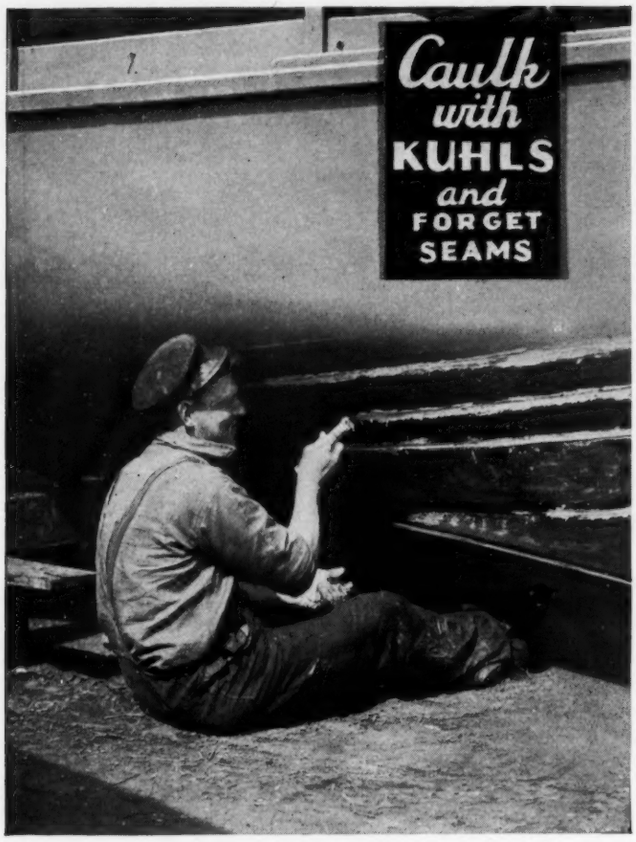

KUHLS

Shows unusual caulking economies, it lasts for years

Kuhls offers boat owners many superior advantages but one outstanding feature, known to all experienced yachtsmen, is the fact that Kuhls compositions last for years when properly applied and reduce the labor costs which yearly caulking work requires. Here's where Kuhls makes you the big saving.

Kuhls is not a putty. It is an elastic composition that fills and seals seams — solidifying them into a water-tight, air-tight craft that defies blistering suns and raging storms. It never dries or hardens — elastic, it becomes a part of the wood and gives with changes in temperature.

You have never known freedom from seam troubles unless you've used Kuhls. In five colors at leading dealers and yards.

No. 1 for Decks — No. 2 for Hulls — No. 3 for Laying Canvas

H. B. FRED. KUHLS, 65th and 3rd Ave., BROOKLYN, N. Y.

Sole Manufacturers since 1889

KUHLS Elastic Seam COMPOSITIONS

While at the helm Sopwith lives "on his toes"; intuitively, he gauges every challenging move of his opponents. A man of swift action, he is yet retiring, almost shy by nature; in manner he is poised, and with an easy confidence.

While enjoying the courtesy of racing in *Shamrock V* with Thomas Sopwith I was greatly impressed by his power of detachment and concentration when at the helm; he was completely oblivious to everything outside the race. Before giving a smart order to captain or crew his mind had already measured the possible reactions; rarely did he leave anything to chance.

Endeavour's owner is a Corinthian with nerves of steel. With him, yacht racing is the world's finest sport, and he plays that game hard till the finishing gun booms. American yachtsmen will find him one of the keenest and cleverest opponents who have ever crossed the Atlantic in quest of the America's Cup.

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The Bugeye "Triumph"

(*Continued from page 81*)

is used. The *Triumph* carries a 66-foot foremast. The mainmast in bugeyes of this size is from 5 to 6 feet shorter than the foremast, but there is no fixed rule covering this point. In general, the later bugeyes had proportionately longer mainmasts than the earlier ones, and occasionally one may be seen with masts of nearly equal height. The mainmast of the *Triumph* is 61 feet long. The rig never reaches the ketch proportions frequently seen in yacht adaptations.

The diameter of the foremast of the *Triumph* is 14 inches at the deck; that of the mainmast is 11 inches. The diameter at the shoulder is about two-thirds the diameter at the deck, with a straight taper. The shoulder is about five feet from the masthead. Jibstay and shrouds lead to the shoulder, having eyes spliced in them which go over the masthead. Forestay, spring stay, halliards and topping lifts are shackled to withes at the mastheads. The mainmast, except on the larger bugeyes, has a single shroud on each side, while the foremast has two. They are always set up with deadeyes and lanyards.

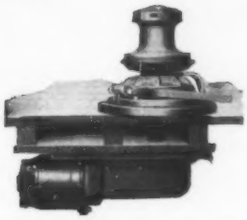
The bobstay, usually of chain, is led from a withe at the end of the bowsprit and it is now generally the practice to set this up with a turnbuckle. The jibstay is rove through a hole in the bowsprit and leads to a chain attached to the stem. It also is usually set up with a turnbuckle.

The bowsprit extends outboard a distance equal to the beam of the vessel, except in the case of very wide bugeyes, where its length is somewhat less than the beam. The main boom usually extends over the stern about one-third of its length, but in some instances, as much as one-half its length.

The jib sheet travels on an iron bar extending from one rail to the other, just forward of the foremast. In order to allow a free swing, the hauling part is led to a block aloft, then brought down and belayed in the port rigging.

The fore sheet travels on a rather short deck horse of the conventional type. The main sheet travels on a horse which is mounted on the "fashion pieces." These are timbers fitted to the stern, and through which the rudder stock passes.

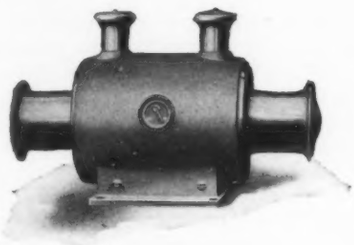
The bugeye type is excellently suited for the work the vessel is intended to do, and can be handled easily with a very small crew. These boats are also fast and weatherly and can be driven hard when the occasion arises.



Type "C" Electric Windlass

AECO

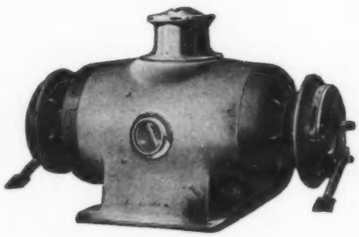
THE MARK OF DISTINCTION



Type "D" Electric Boat and Sail Hoist

Type "V" Electric Sail Hoist

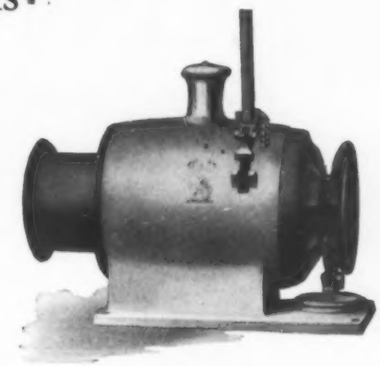
WINDLASSES BOAT HOISTS
SAIL HOISTS STEERING GEARS
DAVIT WINCHES ANCHORS



Type "G" Electric Windlass

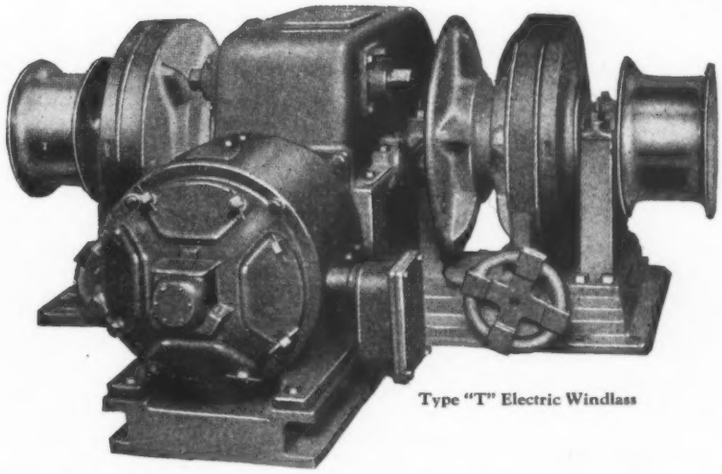
A TYPE AND SIZE FOR ANY BOAT THAT NEEDS ONE

SPECIFY



Type "J" Double-Acting Hand Windlass

NRA MEMBER U.S. WE DO OUR PART



Type "T" Electric Windlass

Ask your boat yard for particulars, or write for literature

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AMERICAN ENGINEERING COMPANY, 2432 ARAMINGO AVENUE, PHILADELPHIA, PA.

The
Castle
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Bermuda Yachtsmen Move Into New Home

(*Continued from page 53*)

organization devoted to the sport. It was in that same year, and only some three months later, that about thirty-five devotees of sailing met under a calabash tree near the Bermuda home of Tom Moore, the poet, and over a Bermuda luncheon, with all that goes with it, inaugurated the Bermuda Yacht Club. Sailing a boat had always been part of the education of every Bermudian. The people of the Islands took to boating as do ducks to water, and the competitive instinct was strong when they got afloat, so that boat racing was always popular and races were big events in Bermuda.

The records show that most of the early meetings of the Club were held in various taverns on the islands, and at one of these an army officer, Captain Lord Mark Kerr, was elected the first commodore, and the first formally organized regatta was arranged for April, 1845. A room for club headquarters was eventually acquired on Port's Island, and here the members and crews gathered between races, each carrying his own lunch and refreshment.

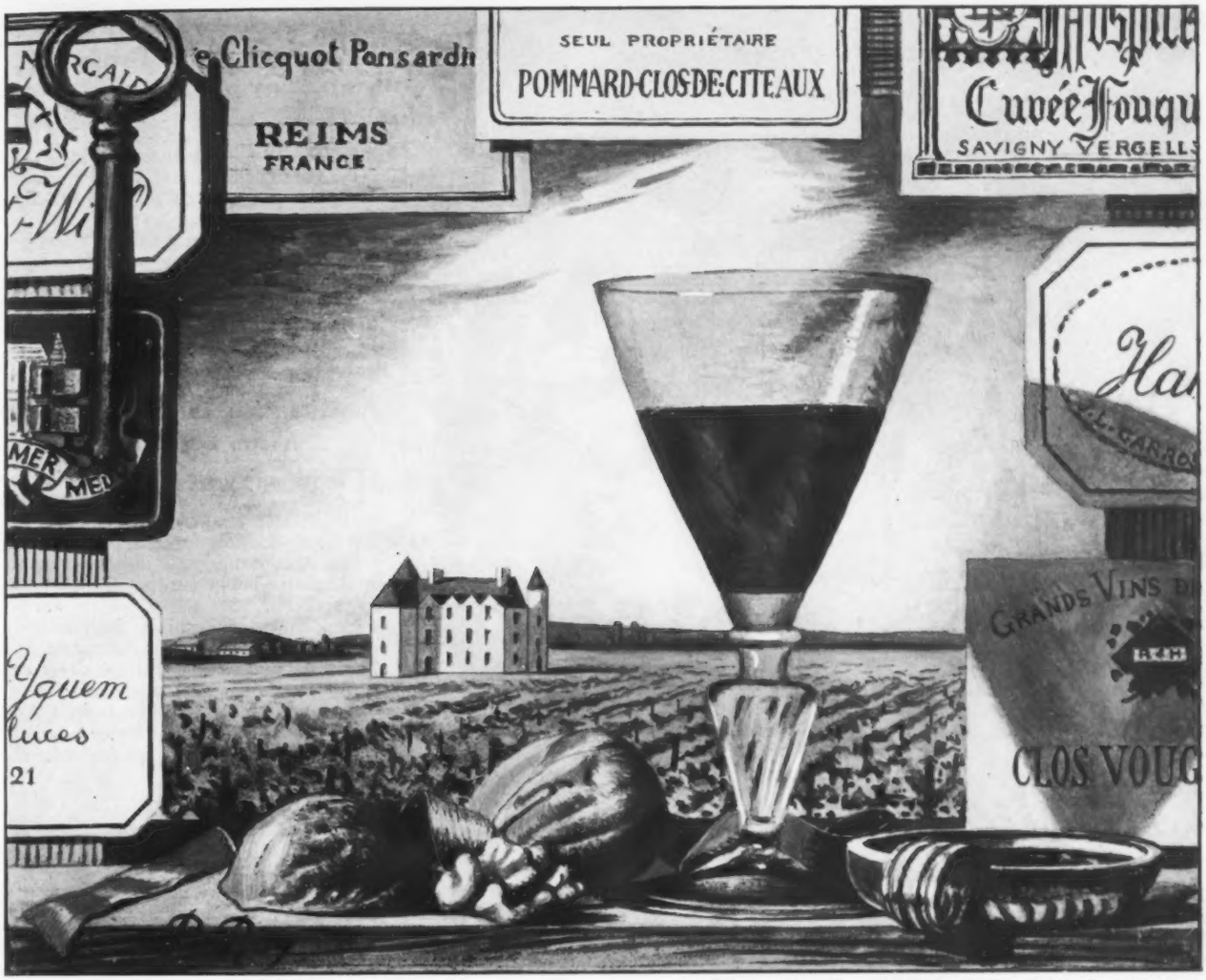
It was in this year, 1845, that Her Majesty Queen Victoria gave permission for the Club to call itself the Royal Bermuda Yacht Club, in reply to a petition from the members for royal patronage to "encourage the loyal inhabitants of these Islands in an effort in imitation of one of the first recreative institutions of the Mother Country." At that time the Club comprised 57 members and 16 yachts, a healthy beginning.

In 1849 the Club participated in the first international yacht race in which the United States took part. In the spring of that year the 48-foot American schooner *Brenda* was sailed from Boston to Bermuda, and while there she was matched against the smaller Bermuda sloop *Pearl*, in a race on Great Sound. There was much betting on the result, but the winner, after the lapse of 85 years, seems in doubt. The American reports give the verdict to *Brenda* by 55 seconds, while the Bermudian's claim that the smaller *Pearl* was the victor. Whatever the result, the importance of this visit lies in the friendship then begun between the yachtsmen of this country and those of the little group of islands lying seven hundred miles off our coast. Thirty-five years later this was expressed in a report in a New York newspaper as follows: "Rear Commodore Platt, of the New York Yacht Club, in Bermuda on his schooner *Montauk*, and his guests dined off turtle soup, turtle steaks and fins at the club house of the Royal Bermuda Yacht Club, and it would be impossible to have a more heartfelt and generous expression of welcome than came from the 'Mudian yachtsmen to their American Cousins."

It was in 1850 that the members of the Club first acquired a clubhouse in Hamilton, a small affair, with a man and a woman in charge. Just when the Club first moved to its Front Street quarters, which American yachtsmen grew to know so well, is unknown, as the Club records of that period have been lost, but it was probably in the late sixties or seventies of the last century. In 1861 the Club still maintained a place on Port's Island, for in that year Prince Alfred, Queen Victoria's second son, attended one of the Club's luncheons there, and donated a cup, to be raced for annually.

It was in 1906 that the first yacht race from "the States" to Bermuda was sailed, and for three years the event was run annually. Then it lapsed for fifteen years, to be resumed in 1923, since when it has become a biennial event and has made ocean racing popular throughout the world. However, while this race offers an ideal course for an event of this character, it is, perhaps, the

(*Continued on page 126*)



From a water-color painted for the French Line by Pierre Roy

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charm of Bermuda itself and the welcome that the members of the Royal Bermuda Yacht Club give to the tired sailor after the 700-mile drive across the Gulf Stream that has made this particular race so popular with Americans. Better proof of this popularity cannot be offered than the fact that in 1930 no less than 42 yachts, carrying perhaps 420 yachtsmen, raced to Bermuda, a record which has never been exceeded in the annals of yachting. In the race this year, to be sailed in June, the fleet will drop anchor directly off the new home of the Royal Bermuda Yacht Club, to find the same hospitable welcome that has always awaited them in the past.

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The Lost Mariner

(*Continued from page 66*)

Out into the wide Pacific he went, without chart, chronometer, sextant or compass; indeed, he was incapable of using them if he had had them. He was bound for the Marshall Islands first, 1,930 miles distant, and thence to Singapore. These were the landfalls he seemed to have most in mind.

When asked how he hoped to reach them, he replied that he would steer to the west by watching the setting sun, and at worst was bound to fetch up somewhere on the coast of Asia.

Sublimely ignorant of navigation and the perils of the sea, he set sail in faith, guided solely by the vision which had called him from his carpenter's bench in Indiana. Men called him a crank: and a religious fanatic he undoubtedly was, with courage born of complete confidence in the verity of his mission and his calling. He felt that he was not as other men, but one chosen for a Holy purpose, and set apart and consecrated to it.

His departure was treated as an event by the local newspapers, and next day a naval airplane on patrol went out of its way to see how he fared, circled over him, dropped the latest newspapers with the story of his sailing, waved him "Goodby," and left him to go on his way alone.

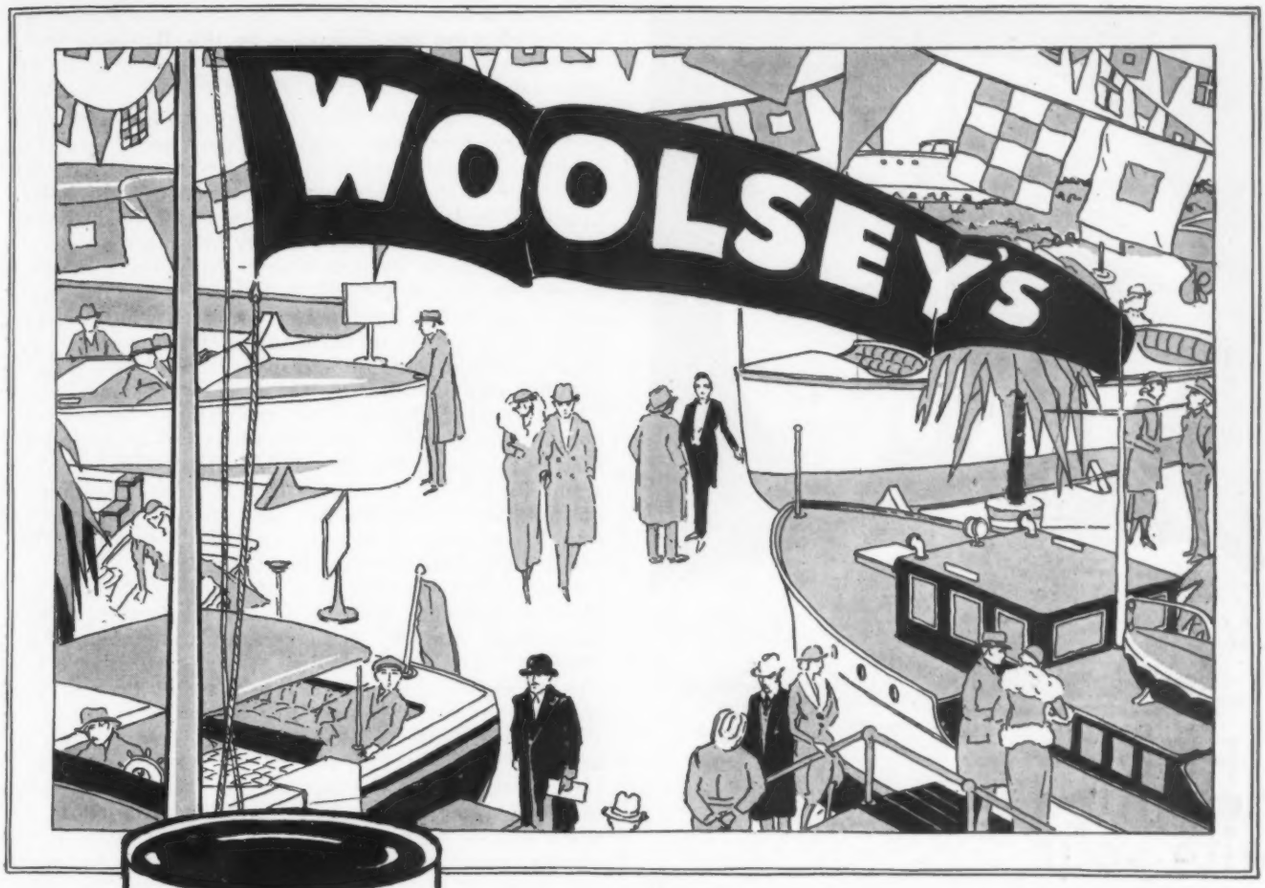
So far as is known Sparks never made the Marshall Islands, but he did succeed in crossing the Pacific in safety, for he is next heard of as arriving at the town of Tandag, on the coast of Mindanao, in the Philippines, 73 days later and more than five thousand miles from his starting point. He had been scantily provisioned on leaving Honolulu, and is reported as being in good health but nearly starved when he arrived.

He was next heard of at Matimus Point, which he reached by sailing down the east coast of Mindanao. Here he landed and reported himself to Major Guy O. Fort, of the Philippine Constabulary. He stayed here only a short time, bought some provisions, and sailed for Zamboango, about a hundred miles away. This was the last ever seen of him.

Four months later his boat was found, far off its course, stranded, stripped, and abandoned, but still in good condition. It was learned that at Tandag some over-zealous official took from him an old saber, a bayonet and a shotgun, because he had no license from the Philippine Government to carry arms.

There is no reason to think that he was lost by shipwreck or the mischance of the sea. He had made a voyage almost without parallel. He told Major Fort that he had good weather all the way across the Pacific.

Will his fate ever be known? In these waters there are, even today, Arab dhows and Chinese junks, the crews of which have no objection to an act of piracy when it seems safe. Perhaps he fell into their hands. Perhaps he went ashore for some purpose and lost himself in the jungle. Who can tell?



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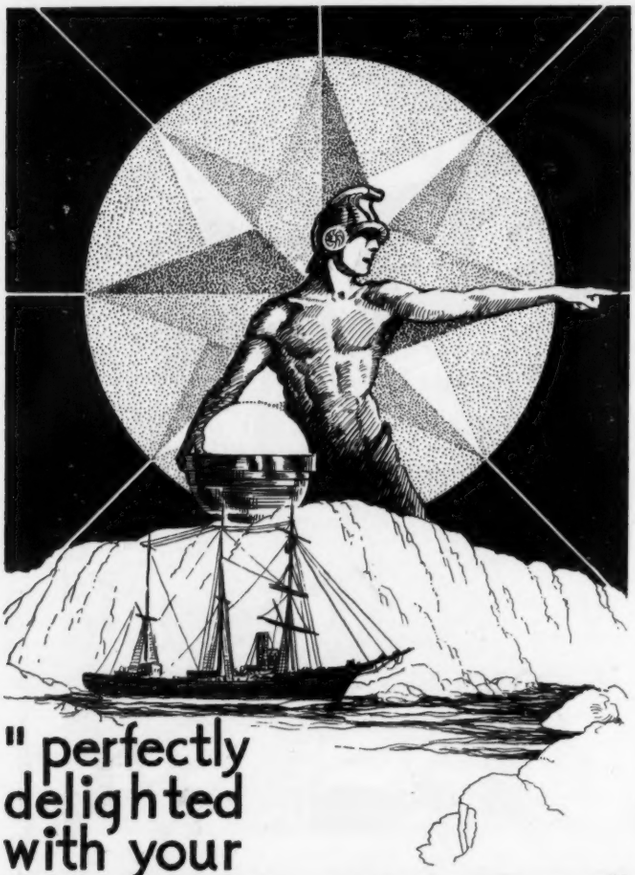

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Hunting for Treasure in the Bahamas

(*Continued from page 46*)

there were huge, brownish-yellow domes of brain corals, and everywhere were tangles of dark weed and black sponges. Directly beneath us, there was no light and shade, no relief, no perspective, and though the bottom appeared as level as a table, it was, as we discovered later, as rough and broken as any mountain gorge.

To distinguish natural objects from the remains of wrecks was a most difficult matter. Over and over again we became wildly excited as we spotted what appeared to be timbers, ribs, or wreckage of ships; over and over again, we were sure we had discovered chests, kegs, or cannon, only to find, when the divers went down in their "hats" to investigate, that our "finds" were merely coral formations. But luck was with us — truly amazing luck — for presently one of the party discovered an anchor, a moment later two more were seen, and almost at the same instant another man cried out that he had found a cannon. Everyone was wildly excited. There was no doubt that we had located a wreck.

Speculation ran high as to whether the remains were those of a treasure-laden galleon, a pirate ship, or some later vessel. Rapidly, the air pump was connected and manned, the divers donned their grotesque copper "hats" and dropped over the boat's side. Peering down through the water-glasses, we watched breathlessly as they moved slowly about, examining the great gun and anchors, poking about, searching for other portions of the wreck. From the surface the anchors appeared scarcely larger than a long-boat's kedge anchors, but when a diver grasped one by its ring and raised it to a vertical position, its shank towered fully two feet above his head. It required all our tackle and the united strength of the boat's crew to raise the smallest of the three anchors, while the largest was eleven feet in length. And when we came to salvaging the gun we found it an impossible task.

Though ancient anchors and cannon were interesting, and though their forms and workmanship proved that our wreck was unquestionably that of a seventeenth century galleon, we were after more valuable things and we abandoned gun and anchors and devoted our energies to searching the bottom and trying to determine the form and position of the ancient wreck. We had expected to find ribs, timbers, perhaps a stem or sternpost of the old ship; but not a trace of timbers or planks was visible, everything being completely hidden by a thick encrustation of sand cemented together to form a concrete-like covering. Wreckage, ironwork, timbers — everything was coated with the white crust, and only by striking every object, every lump, every protuberance with pick or crowbar could man-made objects be distinguished from natural growths. And here let me digress to say that pieces of eight, doubloons, and onzas which have lain for three hundred years beneath the sea are not the shining disks we read of in fanciful treasure tales. Instead, they appear as rough, irregular, shapeless masses or nodules of lime, the coins being cemented together by the mineral formation and corrosion, and forming a more or less perfect cast of the bags, kegs or chests in which they were once enclosed. Even when raised and placed on deck they bear no resemblance to coins until broken apart. Even bars and sows of silver, and ingots of gold are unrecognizable, appearing as rough, irregular lumps indistinguishable from pieces of dead and broken coral, until a blow of pick or crowbar reveals the tarnished metal or the tell-tale stain of corrosion. In fact, the only metal we salvaged which still retained its color and brightness was some sheet platinum.

Naturally, under such conditions, it was necessary to search every inch of the bottom, examining and chipping at every projection and lump. Yet so great was the difficulty of distinguishing remains of the ship and cargo from natural objects that our divers repeatedly walked over ironwork, a grapnel and a huge copper kettle, thinking the objects merely coral formations, until a stroke of bar or pick revealed their true character.

On that first day we devoted our time to investigating what we assumed was the forward portion of the old galleon, striving to form an idea of position and size of the wreck. It was thrilling work to haul up lime-encrusted objects torn from their long resting places by the divers, and to examine and handle the fittings of a sunken treasure ship. There were hatch straps and chain plates, deck bolts and sheet toggles, a steel crutch that once had supported a swivel gun, and the massive band with a huge hoop attached which had once supported the "Jimmy Green" sail beneath the galleon's great bowsprit. Here was positive proof that we had reached the bows of the wreck, and the divers began searching in the opposite direction.

We soon found that we had been far more lucky than we had dreamed in finding the wreck that first day, for it was the only calm day we had in many long weeks, and only in calm weather could we have located the remains of the galleon. Thereafter there were always stiff breezes, or strong winds with a choppy sea, or heavy swells, and while we carried on our salvaging despite wind and waves, there were days when it was impossible to leave the mother ship. Even in moderately rough weather it was extremely hazardous work, with the divers' boat moored between the jagged reefs with only a few feet to spare, where the parting of a line frayed by the sharp coral might at any moment send our craft to destruction.

Slowly the divers worked aft on the wreck, and presently reached the spot where the galley and carpenter's shop had been. Up from the depths came more ironwork and bits of rigging — chain plates and rings, straps and deck fittings, fragments of wooden rails still held together by immense iron drift bolts, cast-iron plates and mast-bands. An iron kettle was discovered. There were pewter plates and bits of crockery, a broken wine jar and porcelain dishes, bits of corroded steel that had once been tools. There was a sounding lead, crudely fashioned and perforated by two holes instead of one for the line. At another time we hauled up an immense copper pot built up of sheets riveted together and fitted with a spout and with three bronze legs. My interest and curiosity were instantly aroused, for the copper and bronze showed little trace of verdigris.

Very interesting and remarkable were the effects of three centuries of submersion on the various metals and materials we salvaged. Cast iron could be whittled with a pocket knife and could be used like a lead pencil. Wrought iron appeared more like petrified wood than metal, with the outer surface longitudinally grooved and showing a distinct grain. Yet under the weathered exterior the metal was as tough and bright as ever.

The vicinity of the ship's galley and carpenter's shop proved a veritable mine of interesting historic things. It was here that we found the sheet platinum, which had doubtless been used for repairing kitchen or other utensils, for the old Dons regarded platinum as a base and comparatively worthless metal, and they employed it in making the commonest and most plebeian of utensils. Here, also, we came upon one of our greatest surprises, a mass of flax tow between pieces of leather, which had evidently been part of the piston of a bilge pump, perfectly preserved. Think of it! Flax and leather unchanged after three centuries beneath the sea!

But interesting as these objects were, fascinating as it was to speculate on what the divers might send up next,

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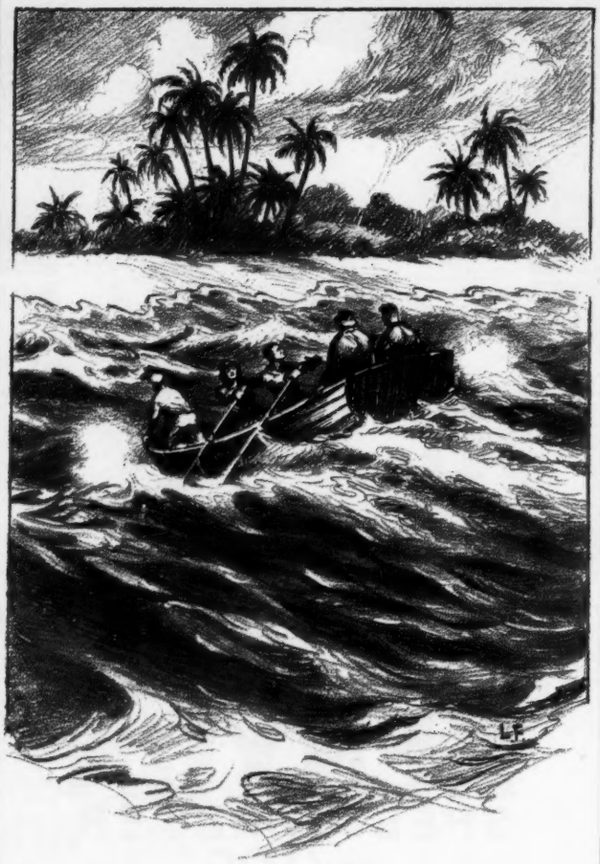

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we were seeking treasure, and a galleon's galley and carpenter's shop held little promise of containing bullion and specie. So, having determined beyond all reasonable doubt that we had reached the midship section of the wreck, we worked slowly, carefully, aft. Here the difficulties of searching and salvaging were vastly increased by the masses of staghorn coral, the giant madrepores towering like trees above the divers' heads, and by the debris of broken coral which had fallen from the nearby reefs. It was here, amid these tangled growths that a second huge gun was found. Nearby, the divers came upon chain plates, ironwork, and fragments of the mizzen rigging. They salvaged a crudely forged five-pronged grapnel, which apparently had belonged to the galleon's longboat, and a few days later they sent up the massive iron hangers that once had supported the plate ship's huge rudder. There was no question that they had now reached the extreme stern of the ship. Somewhere under those brush-like accumulations of stag-horn coral, those palmate madrepores, the debris and the concrete-like lime encrustation, lay the galleon's strong room and untold quantities of silver and gold.

But our time was rapidly drawing to an end. Bad weather, unforeseen undersea conditions, and the difficulties of exploring the wreck had delayed matters far beyond my expectations. Our salvaging job had become a matter of submarine mining. Pneumatic drills and jack hammers and high explosives were required to blast and tear away the coral growth and the limestone crust, and the divers worked feverishly.

But we had made one very important discovery. When the big copper pot had been torn free from its bed we had found that the interior was filled with loose coral sand. The hole from which it had been lifted told the story. Beneath the hard crust of limestone the ancient wreck lay buried to the level of her deck in sand! For many years after she had gone down the broken fragments of coral had silted down, the sand had filtered into every crack and crevice; the shattered planking, the broken timbers and ribs, the gaping hatches, the hold itself — all had been slowly filled with sand. Under natural conditions, the currents between the reefs would have carried the sand away, would have scoured the bottom clear; but the wreck had formed a lee, the currents had been interrupted or changed, the sand had found lodgement, and not until it had reached the level of the wave-swept, shattered deck had it been prevented from piling up indefinitely by the currents. And then, through the centuries, the carbonate of lime had cemented the grains of sand and bits of shell and coral together to form a rock-like covering above the wreck. Within this limestone casket the remains of the old galleon had been hermetically sealed, and timbers, metals, even tow and leather, had remained but slightly altered for three hundred years.

To be sure, the encrustation was only a few feet in thickness — often but a few inches. But to break through two feet of such material under six or eight fathoms of water is a slow and difficult job, even with the aid of dynamite. It was a race against time. Each day the weather was becoming worse, the seas were running higher. Both ship and divers' boats were in constant jeopardy. The hurricane season was rapidly approaching, and to be caught in a heavy gale among the reefs meant almost certain destruction.

Wild was the excitement, tense our nerves, as we watched the divers toiling at the bottom of the sea. At last, satisfied that we could salvage no more without additional equipment, we gathered in our moorings above the sunken treasure ship, hoisted small boats on deck, battened down the hatches over the mound of lime-coated metals in the forehold, and, hoisting anchor, headed back for Nassau.

a. c. f.

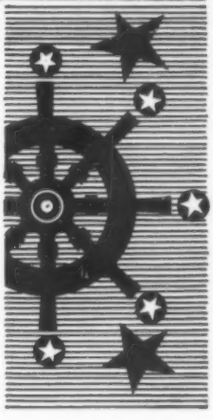
In this new twin-screw "36" a.c.f. incorporates the most modern features and conveniences. Forward cockpit with comfortable seat and hatch to forward cabin. Four comfortable berths. Two full-length clothes lockers. Complete toilet, dresser and numerous shelves. Separate galley, with large icebox, iced from outside. Three-burner alcohol stove. Extra-large sink. Deck house completely glassed, with one pullman berth and one seat berth. All openings screened with non-corroding Inconel metal. Door to large after-cockpit. Twin 80 h. p. Chrysler Crown engines, mounted in rubber. Engine room (and galley) painted with fire-resistant paint, ventilated by outside blower. Ample catwalk and grab rails. Speed 17 m.p.h. Price $7150.

THE NEW a.c.f. 36 TWIN-SCREW CRUISER

Length overall: 36′ 6″
Beam moulded: 10′ 8″
Draft: 3′ 0″
Stem: Teak 3¾″
Keel: Yellow pine, 1 piece, 3¾″
Shaftlog: Teak with 2″ brass tube
Stern Panel: 1″ Philippine mahogany, radius 20′
Stern Knee: Bronze casting
Floor Timbers: 1⅛″ oak, at engine 1⅜″
Floor Timber Bolts: ⅜″ bronze
Engine Stringers: Fir or yellow pine 1⅜″ x 4″
Engine Beds: Teak 3″ thick
Bilge Stringers: Fir or yellow pine 1⅜″ x 2″
Shelves: Fir ⅞″ x 3″
Deck Shelves: Fir 1⅜″ x 8″—10″
Frames: White oak 1⅛″ x 1¾″—10″
Planking: ⅞″ fir, Everdur screws
Bulkheads: 13/16″ white pine

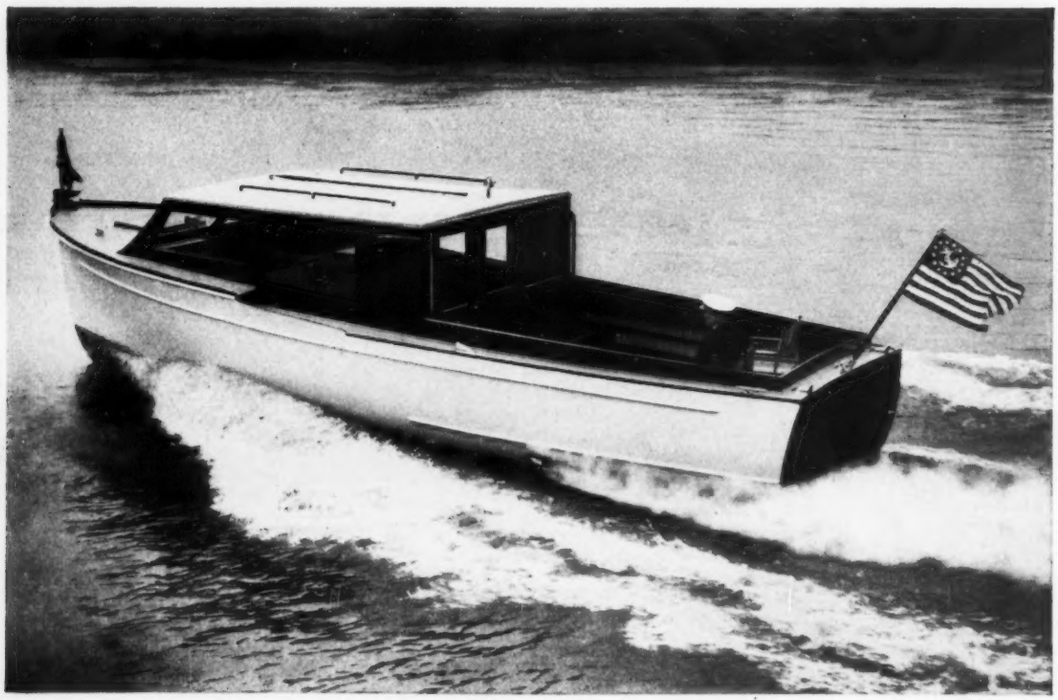
Superstructure: 13/16″ Philippine mahogany
Furniture and trim: Philippine mahogany
Deck Beams: 1⅜″ x 2¼″ oak
Carlins: 1¼″ x 1¾″ 5 ply oak
Cabin Roof: Tongue and groove ¾″ Oregon pine
Deck House Roof: Tongue and groove ⅝″ Oregon pine
All Roofs: Canvassed
Deck: ¾″ Philippine mahogany
Mouldings, Foot, and Hand Rails: Philippine mahogany
Stem Band: ¾″ half-round brass
Stern Band: Brass
Mast: Spruce, streamlined
Gas Tank: Lyonore metal, galvanized, 200 gallons
Water Tank: Lyonore metal, galvanized, 55 gallons

Gas Pipes: All brass and copper
Water Pipes: All lead and brass
Scuppers: In all corners of both cockpits
Ventilation: 4 large ducts to engine space
Engine Room and Galley: Painted with fire-resisting paint
Engines: 2 Chrysler Crown, direct drive
Propeller Shafts: 1¼″ Tobin bronze
Propellers: 3-bladed bronze, 15″ x 12″ 2 cutless rubber bearings each shaft
Steering Gear: Ross cam and lever, with 24″ mahogany wheel on mahogany steering stand
Complete controls, including ammeter, oil gauge, tachometer, and motometer, in panel
Carpet: On cabin and deck house floors
Linoleum: On galley and toilet floors
Screens: For all openings, Inconel metal, requires no paint, will not corrode



This new a.c.f. 30-footer is an excellent day cruiser or all-purpose boat with ample speed, unusually commodious after-cockpit, and complete and comfortable cruising accommodations. It makes a fine yacht or sailboat tender. A six cylinder Chrysler Crown straight drive engine mounted in rubber gives an easy speed of 17 miles an hour. As an added safety factor the engine room (and also the galley) is painted with a special fire-resistant paint. The helmsman's station is in a fully glassed and screened deck house. A complete galley fitted with icebox, sink, and stove makes the preparation of meals an easy task. The roomy cabin has full headroom throughout, two exceptionally comfortable berths, complete toilet, and ample locker space. The entire boat is screened with custom-made screens of Inconel metal, which will not corrode, never need paint, and may be cleaned of accumulated dirt with soap and water. An outstanding value at $3275.

THE NEW a.c.f. 30-FOOTER



a.
c.
f.

Length overall: 30′ 6″
Beam moulded: 9′ 0″
Draft: 2′ 8″
Stem: Oak 3½″
Keel: Yellow pine, 1 piece 3½″
Shaftlog: Yellow pine with 1¼″ brass tube
Stern Panel: ⅞″ Philippine mahogany
Stern Knee: Bronze casting
Floor Timbers: ⅞″ oak bolted to keel
Engine Stringers: Fir 1¼″ x 3″
Engine Bed: Oak 3″ thick
Shelves: 3 pairs fir ⅞″ x 3″
Frames: White oak ⅞″ x 1½″—9″
Planking: ¾″ fir—Everdur screws
Main bulkhead: Solid Philippine mahogany
Superstructure: Philippine mahogany
Cabin Roof: Tongue and groove, Oregon pine, canvassed
Deck: Oregon pine, canvassed
Mouldings, Foot, and Hand Rails: Philippine mahogany
Stem Band: Half-round brass
Stern Band: Brass
Gas Tank: Lyonore metal, galvanized, 80 gallons
Water Tanks (2): Lyonore metal, galvanized, 30 gallons
Gas Pipes: All brass and copper
Water Pipes: All lead and brass
Scuppers: In four corners of cockpit
Ventilation: 4 large ducts to engine space
Engine Room and Galley: Painted with fire resisting paint
Engine: One Chrysler Crown, direct drive
Propeller Shaft: 1⅛″ Tobin bronze
Propeller: Hyde 3-blade, 18″ diameter
Shaft bearing: Parson's white bronze
Steering Gear: Bronze cable over suitable sheaves, with 24″ mahogany steering wheel and complete controls
Floor Covering: Carpet in cabin
Screens: For cabin windows, Inconel metal, requires no paint, will not corrode

This a.c.f. Class One cruiser, 25′ 11″ over all, beam 9′ 0″, and with only 2′ 6″ draft, cleverly contrives to pack into these dimensions a roomy bow cockpit; a commodious trunk cabin with *full* headroom, full-length berths for four, and ample locker space; a toilet; a galley; and a man's sized rear cockpit sheltered by an awning. The cabin sides and coamings are of Philippine mahogany, full 11/16″ thick, and finished bright. The hull is very stanch, being built with the exclusive a.c.f. "shelf" construction. A six-cylinder Gray straight-drive engine is completely out of the way under the cockpit floor. A 65-gallon gasoline tank, entirely removed from the engine compartment, gives ample cruising radius. Sturdy, seaworthy, easy to operate, and very economical, this a.c.f. 26′ cruiser is a boat to be proud of at a price within reason, $2625.

THE a.c.f. 26-FOOT CRUISER

Length overall: 25′ 11″
Beam moulded: 8′ 8″
Draft: 2′ 6″
Stem: White oak 3½″
Keel: Yellow pine, 1 piece, 3½″
Shaftlog: Yellow pine with 1½″ brass tube
Stern Panel: ⅞″ Oregon pine
Stern Knee: Cast bronze, a.c.f. patent
Floor Timbers: 1⅛″ white oak
Engine Stringers: Oregon pine 1¼″ x 3″
Engine Beds: Oak 3″ thick
Bilge Stringers: Oregon pine 1⅜″ x 2″
Shelves: Oregon pine 1⅛″ x 3″
Deck Shelves: Oregon pine 1¾″
Frames: White oak ⅞″ x 1½″—10″
Planking: 13/16″ Oregon pine, rift grain
Bulkheads: 5-ply Oregon pine, edges riveted
Superstructure: 13/16″ Philippine mahogany
Cabin Roof: Tongue and groove ¾″ Oregon pine
Canopy: Slat construction with Khaki covering

Deck: 1¾″ Oregon pine
Mouldings, Foot, and Hand Rails: Philippine mahogany
Stem Band: ⅝″ half-round brass
Gas Tank: Galvanized steel, 65 gallons
Water Tank: Galvanized steel, 40 gallons
Gas Pipes: All brass and copper
Water Pipes: All lead and brass
Scuppers: In both cockpits
Ventilation: 4 ducts to engine space
Engine: Gray 6-56
Propeller Shaft: 1⅛″ Tobin bronze
Propeller: 3-bladed bronze 15″ x 10″, protected by substantial skeg
Steering Gear: Ross cam and lever, with brass, wooden spoke steering wheel
Carpet: On cabin floor
Equipment: Includes all government regulations
Curtains, and/or screens may be had for the after cockpit as an extra

a. c. f.

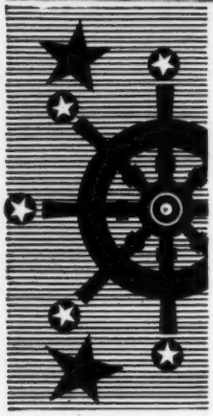
AMERICAN CAR AND FOUNDRY COMPANY

30 CHURCH STREET · NEW YORK, N. Y.

Sales and Service Station: 285 King Avenue, City Island, New York

Twenty-four feet over all, with a beam of seven feet, and drawing only two feet three inches, A.C.F. offers an ideal first boat for the man who wants to enjoy the water, yet tie up relatively little money. Forward is a cabin with two comfortable full-length berths and well arranged toilet. A galley may be fitted as extra equipment. A generous cockpit gives plenty of room for a number of guests. Equipped with a Chrysler Ace motor she will show 17 m.p.h. Construction and workmanship conform to A.C.F.'s invariable high standard. All hull fastenings are of bronze. Cabin sides and coamings are of Philippine mahogany, finished bright. Deck hardware is of polished brass. The price is $1820.

THE A.C.F 24-FOOTER



Length overall: 24′ 0″
Beam moulded: 7′ 0″
Draft: 2′ 3″
Stem: White oak 2¾″
Keel: Yellow pine, 1 piece, 2¾″
Shaftlog: Yellow pine, fitted with brass tube
Stern Panel: ¾″ Oregon pine
Floor Timbers: 1 1/16″ white oak, at engine ⅞″
Stringers: Oregon pine, 2 pairs, ⅞″ x 1¾″
Engine Beds: White oak 2″ thick
Shelves: Oregon pine ⅞″ x 2-3″
Deck Shelves: Oregon pine 1⅜″ x 6″
Frames: White oak ¾″ x 1¼″ on 7″ centers
Planking: ⅝″ Oregon pine, Everdur screws
Bulkheads: 5-ply, ¾″ thick, copper riveted, brass channel edge strips
Superstructure: Philippine mahogany
Deck Beams: 1⅛″ x 1¾″ white oak
Roof: Oregon pine ½″, canvas covered
Deck: ⅝″ white pine
Mouldings, Foot, and Hand Rails: Philippine mahogany
Stem Band: Brass
Gas Tank: 10 gallons capacity
Gas Pipes: All brass and copper
Scuppers: Lead in cockpit corners
Engine: Chrysler Ace
Propeller Shaft: 1⅛″ Tobin bronze
Propeller: 3-bladed bronze, 14″ x 12″, protected by substantial skeg
Steering Gear: Spoke wheel, drum adjustable to take up slack
Carpet: On cabin floor
Equipment: Includes all government regulations
Alternate arrangement at slight increase in price may be provided for after cockpit, to include awning overhead, side curtains, etc.
Galley with fresh water tank, sink, icebox and stove, may be fitted as an extra
Speed: 17 miles per hour.

The right is reserved to change any or all prices without notice

Still greater economy for the small pleasure boat and work boat owner. Greater safety. Greater cruising range.

●

Built by a concern that pioneered the high speed Diesel. Write for complete details. Now is the time to prepare for next year's boating.

●

THE BUDA COMPANY
HARVEY (Chicago Suburb) ILLINOIS

BUDA LEADS AGAIN
with a
NEW SMALL
DIESEL ENGINE

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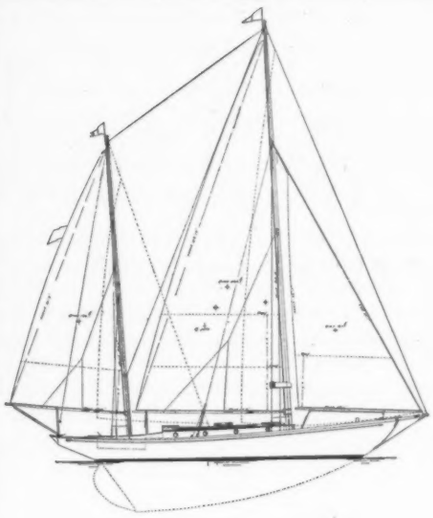
See it at the
MOTOR BOAT SHOW
January 19 to 27
Grand Central Palace, New York
SPACE W

BUDA MARINE ENGINES
DIESEL OR GASOLINE



DIMENSIONS

L.O.A. 40′	BEAM 11′
L.W.L. 30′ 6″	DRAFT 5′ 10″

CASEY'S BOATS

CONSTANTLY IMPROVED ALWAYS UP TO DATE

One of the pertinent questions often asked by the boating public is "How well should a boat be constructed?" This has always been hard to answer as different yards use different standards. Now, if we could establish a standard and rate it 100% then we could grade the others from that standard. To make a start, we will attempt to tell you how well Casey boats are built.

Take the case of "Bluejacket," one of our own 49′ auxiliaries: She was caught right in the center of the August hurricane somewhere off the Delaware capes. She was unfortunate enough to have been driven into the breakers, pounded on the bottom, knocked down, lost her rig, and received such a shaking up that the crew figured they had only escaped by a miracle. That miracle was this — that the boat stayed tight through it all. The velocity of the wind was at times well above 75 miles an hour. The report was that the wind blew the clothes right off their bodies.

Another case in which a Casey boat proved her worth was that of the centerboard ketch "Bunch," then owned by the late Carl Foster. She was cruising in the Bahamas and by some misfortune landed on a reef. She pounded for four hours in a heavy swell before she could break away. The only damage suffered was a leak in the garboard which only required recaulking. This boat is as good and tight today as when launched.

We know of dozens of such cases but we lack space to enumerate them all. Since the Casey boats are so well constructed, we will rate them 100%. Those of other construction, that are not so well built, we can rate from 95–90–80% etc. down the line. Those that are better built (if any) can then be rated 105–110% etc. up the line.

Now we've got a start, let's go.

Of course you can take this with a grain of salt, or the whole shaker, if need be. Nevertheless, our advice is to buy a Casey boat and get your money's worth.

All kinds of servicing and storage. First class work at reasonable prices.

CASEY BOAT BUILDING CO., INC., FAIRHAVEN, MASS.

Announcing

THE NEW

MATTHEWS "SAILER"

A single-handed auxiliary cruising sloop of the "Sea Bird" type

True to every Matthews tradition of Huskiness, Ability and Completeness

30-Day Price Guarantee

Designed by
THE MATTHEWS CO.
and
WM. W. ATKIN, N. A.

Exhibited for the first time at the Motor Boat Show together with three of the famous Matthews "38"s in Spaces A6 and A7.

DETAILS

Length o. a.—25′-7″ Beam—8′-6″ Sail area—301 sq. ft.
Length w. l.—22′-0″ Draft—2′-4″ Max. headroom—5′-8½″
Displacement—approx. 5700 lbs. Outside ballast—1475 lbs. iron
Oak keel and framing—Philippine mahogany planking
Bronze screw fastened—Sloop rig, Marconi type mainsail
Sleeps 4 individually—Spring mattresses—Enclosed toilet room
Galley with 2-burner stove, 50 lb. ice box, sink, 30-gal. fresh water tank
Folding table—Full length locker—14-gal. gas tank
Auxiliary motors—1 cyl. 5-6 H. P. Falcon, 4 cyl. 10-12 H. P. Gray.

PRICED AMAZINGLY LOW

This remarkable new boat is the latest development of a family or type which is well known to the old timers for its outstanding accomplishments.

This is probably the first time in history that this type of craft has been developed for large scale production, and, of course, its amazing price is the result.

The Matthews "Sailer" is definitely the last word in the craftsmanship of this industry . . . ***Send for circular.***

• NEW SERIES OF CRUISERS •

The 1934 series of Matthews "38" and "46" Stock Cruisers presents a multitude of engineering advancements. We invite aud urge the technically minded as well as the layman to inspect these new and outstanding cruisers thoroughly and critically.

Advancements in power installations and controls for the elimination of sound and vibration—smoother, more usable power flow through twin screw, twin rudder installations—are only a small part of the advanced features of these "Famous" Matthews "38" and "46" Stock Models. The Standardized 50′ Matthews Cruiser is now available also.

New literature, prices now ready—send for yours today

"38" STOCK CRUISERS MATTHEWS 46 "—since 1890"

THE MATTHEWS CO.
314 BAY SIDE
PORT CLINTON, OHIO

"Wherever you cruise . . . you'll find a Matthews"

"Mind Your Helm"

(Continued from page 71)

A twin screw boat is affected by the wind when backing but can be controlled more easily than a single screw one by slowing or even stopping the leeward engine. It will probably pay to experiment with her under different conditions of wind to see just what she will do.

So far we have considered that the boat is in comparatively deep water. Shoal water makes all sorts of trouble and a boat that is handy in deep water may act up when there is not much under her keel. This is because the nearness of the bottom changes the streamline flow around the hull; the water cannot get to the propeller and rudder from all around, but only from the sides. Then, too, a boat will squat much more in shoal water, the screw pushing the water away from the hull and the flow from forward being impeded. A boat, particularly a rather chubby one, will suck down aft when driven at all fast in shoal water. She will "smell the bottom" and act wildly or not steer at all. Stopping the engine will give the rudder a chance to take hold and sheer out into the channel, and then she will behave better if she runs slowly until deep water is reached. Beware of filling the cooling water intake with mud by rubbing her bilge along a soft bank.

The wind, of course, has to be considered in handling a motor boat. With her bow higher than the stern and drawing less water forward than aft, she will pay off in any kind of a breeze. When going ahead this is not particularly noticeable as a little helm will cure any tendency to fall off. When lying still, however, she will pay off until she has the wind abaft the beam. With a brisk wind blowing, the average motor boat, like the average steamer, will back up into the wind no matter what you do with the rudder. The forces acting to turn her to one side or the other are so nearly balanced that the wind takes charge and the stern goes up to windward as the engines are reversed.

With a sea running — one of any size — the boat tends to lie in the trough of it, rolling most abominably. Backing her will push her stern to windward, with the effect of having any sea that spanks her transom go all over the boat. A wide, flat transom is nothing to shove into a good sea.

The novice learning to steer should remember that he must be alert at all times. The old seagoing rule was that "No one shall speak to the man at the helm" except the officer of the watch. The helmsman's business is to steer, not to be entertaining to guests. He must keep a good lookout and watch every other boat anywhere near, keep his eye on buoys, and so on. He should plan ahead of time what he is going to do about any other boats crossing or approaching his course, so that he may act promptly and not wait until the last minute before shifting the helm or altering speed.

The tyro usually gives a boat too much helm and gets her swinging. He wants to go to starboard, say, so he rolls the wheel over and the boat comes around with a rush. When she has gone too far, he reverses the wheel, and back she swings to port, quite a way beyond the proper course. So over goes the wheel again, followed by the boat, and astern wriggles a wake which would break a snake's back. The great thing is to learn to "steer small," as the saying is; to give a little helm and wait for her to feel it, then perhaps a little more. As she comes near the desired course, "ease the helm," that is, bring it amidships, and "meet her" with a little helm the other way so that she will not swing too far. With care, and by taking things easy, the boat may be held on her course with the use of only a spoke or two of helm.

ADVERTISING PAGES REMOVED

POWER IN RUBBER

FIRES LIKE A "4"

SUPERBLY SMOOTH

SPIRAL DRIVE

SIMPLEX STARTER

NEW-DAY OUTBOARDS BY EVINRUDE AND ELTO

So vigorously new — so sleek and capable looking — your first glimpse of these new motors inspires belief that an entirely new kind of outboard experience is ahead of you. You will not be disappointed. Amazing little engines spin within those gleaming hoods. But — take a ride!

Press the primer button, snap back on the starter handle — you're off — that quickly, that easily. Flip the throttle wide. The boat leaps away — the bow wave foams past — but you almost wonder if the motor is responsible. You hear no noise above the rush of the water. Vibration is absent; wiped away. And riding seems like sailing.

This is the *new kind* of outboard motoring which henceforth thousands will enjoy. Outboard motoring with *new smoothness* because advanced-type power heads, inherently smooth, are actually floated in rubber. *New starting ease,* with special carburetor design and new Simplex starter. *New quietness,* with carburetor intake silenced, entire motor head enclosed, exhaust dispelled under water, and new spiral gears eliminating drive shaft hum. *New convenience.* New protection, cleanliness and beauty through use of streamlined hoods.

Write for the Silver Anniversary catalog describing these and an exceptionally wide choice of other 1934 Evinrudes and Eltos. Several models particularly adapted to dinghy use including the new *Sport Single,* weighing only 29 pounds, at only $79.50. Choice of magneto or battery ignition on all models. Send for catalog today.

OUTBOARD MOTORS CORPORATION, 5642 N. 27th St., Milwaukee

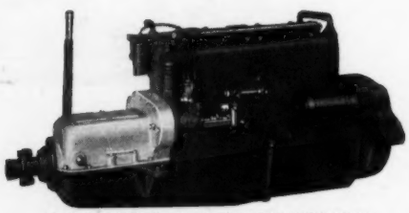
1934

OF OUTBOARD MOTORING

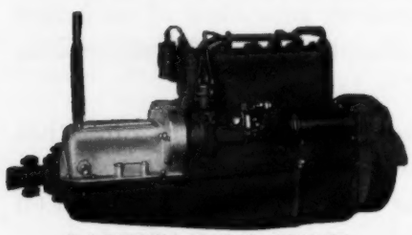
U. S. FALCON MARINE ENGINES

● To get the *ultimate* in marine engine construction — expert workmanship, finest quality materials, rigid "before delivery" tests — you should install, or specify, a U. S. FALCON.

It isn't any fun to go through a season with a balky engine, that lets you down just when you need it most, and causes no end of cussing and irritations. You'll never have any trouble with a U. S. FALCON, because *every FALCON is proved out* at the U. S. plants, before it is shipped. It is *ready for instant service* the minute it reaches you, and will give you steady, uninterrupted service for many seasons.



U. S. FALCON—6-cylinder "70" "80" "90"



U. S. FALCON—4-cylinder "35" "45"
Medium Duty—Direct Drive

Established in 1890, the United States Motors Corp. stands back of every engine it delivers with the strongest and broadest guarantee on the market. The line is complete — 1, 2, 4, 6-cyl. 5, 10, 26–46, 35, 45, 70, 80, 90 h.p.

Why don't you too learn more about U. S. FALCONS? You'll get a new conception of real marine engine service. Just write our engineering department — tell them what you have in mind. Their advice will be valuable to you.

Also manufacturers of U. S. ELECTRIC LIGHT PLANTS—for steady, trouble-free lighting, afloat or ashore. 350 wts. to 15 K. W. Manual control, automatic battery control, full automatic control, A.C. or D.C. Write for information and prices on size and style you require.

United States Motors Corp.
"PRODUCTS MUST GIVE SERVICE"
102A Nebraska St. EST. 1890 Oshkosh, Wis.

Cruising the Amazon

(Continued from page 59)

vicinity of the Parintin Mountains, just south of the mouth of the Madeira River, the banks were high and precipitous. The Madeira, flowing northeast from the mountains of Bolivia, becomes a huge stream after it receives the affluent of the Aripuana. We were now beginning to realize why the Amazon is so large. A few days in the Madeira and we returned to the Amazon again and pushed on upstream until we came to that well-known parting of the ways where black waters merge with white — the junction of the Rio Negro and the Amazon. Up the Amazon lies the road to Iquitos, to Peru and Ecuador, while the Negro leads to Manaos, to the Rio Branco — to the great northwest frontier — to the far-famed Cassiquiare. We took the latter, and within the hour arrived at the fabled jungle city of Manaos, where the black waters rise sixty feet in flood season and great walls have been built to protect the city.

There are no inter-state cruising permits in this part of the world; entering each state is like entering another foreign country — new customs regulations, new declarations, and always a few new payments. Be it never said that the land of *reis* and *milreis* is without customs — they are an affliction. We had come eleven hundred miles through heat and pestilence only to encounter more customs! *Caramba-Sacramento!* What a blessing the huge size of the states! And yet, aside from the numerous customs, Brazilians are the most hospitable of people — kind, generous, considerate.

At Manaos one sees on the different faces the maps of many nations, and in some of those gentle faces, rich brown in complexion, and with dark, smoldering eyes that vie in brilliance with pearly teeth, there flows the blood of the head hunters.

Even equatorial heat, humidity and pestilence cannot kill the spirit of a true yachtsman. Here in Manaos lives an American engineer, one E. B. Kirk, who built for himself a tiny sail boat with a wheezing auxiliary. With barely room enough for himself and his two adventurous young sons, he set out down the river for a bit of deep-sea sailing. Sailing squarely out through the main channel, they met the Amazon bore wave face to face just as it was forming, took it square on the nose, and rent it asunder. To far-off Tobago they sailed, and returned again to Manaos with all the pieces. More than this, the boat was built from plans which appeared in YACHTING.

At Manaos we changed pilots and Indian palaverers and started off anew up the Rio Negro. Navigation became difficult soon after leaving Manaos. Numerous rocks and obstructions lay in our path and we cruised at half speed and sounded continually. With our draft of eleven-and-a-half feet, it was not safe to venture more than 120 miles beyond Manaos, and then only with great caution. We reached the "Tierra de Guariba" district (the land of the howling monkeys), and from here we carried on in the launches and Indian *cayucas*. As elsewhere in the whole Amazon valley, a thousand channels lead in as many different directions; one could travel twenty years and never cover the same route twice, so great is this vast, natural system of waterways.

Finally after weeks in the river, we had used up our reserve ambition, and depleted our food and fuel supplies. Yet it was with reluctance that we turned our bow downstream. Savage faces and strange ceremonies; huge reptiles and birds of gorgeous plumage; nights of glowing moonlight and jungle silhouettes of tropic grandeur — swiftly they all faded, these visions of the magic valley of the Amazon.

Stay-Tite Products to Stop Leaks

ANYONE interested in marine glues, crack fillers, cements and other waterproof products of this nature should visit the booth of the Stay-Tite Products Co., of Cleveland. Included in this exhibit are Stay-Tite Marine Caulking Cement, Stay-Tite Marine Glue, and Stay-Tite Wood Crack Filler, the latter being a powder which, when mixed with water, forms a sort of putty which sets quickly and will not shrink after drying thoroughly. These products come in cans, bottles, tubes and drums, so that one can buy in any quantity desired.

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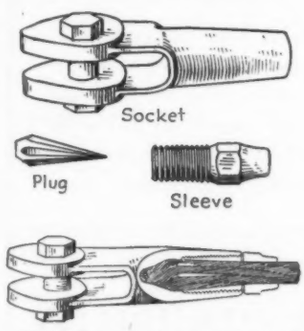
New Wire Rope Sockets by the American Steel and Wire Co.

AN INTERESTING new wire rope socket is being shown by Seaway Equipment, Limited, which bids fair to make a strong appeal in the yachting field. Distributed by the American Steel and Wire Co., for use with different kinds of wire, this Fiege Tiger Claw Socket, which takes the place of a weak, clumsy splice, is easily and quickly attached, and results in a neat, economical job which leaves the wire at 100% strength instead of weakening it, as at a splice. No flame is used, nor is there any hot metal. There are only three main parts to the Fiege Tiger Claw Socket, which is made of stainless steel. They are 100% safe, and only a few simple tools are necessary for any mechanic to attach one in a short time. Ship and yacht riggers should welcome this new, economical and easy way of eliminating costly, weak splices in wire rope of all kinds and sizes.



Fiege Tiger Claw Socket unassembled and assembled

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Gold Seal Piston Rings by the Skinner Chuck Co.

GOLD Seal Piston Rings, manufactured by the Skinner Chuck Co., of New Britain, Conn., are shown in a variety of sizes and types suitable for gasoline, Diesel or steam marine engines. The insertion of strips of anti-friction metal into and around the circumference of each ring presents a ring surface which is said to assure decreased friction, longer life to ring and cylinder, added fuel economy, lower oil consumption, less carbon, greater power and more compression.

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Barbasol presents EDWIN C. HILL, *news commentator, nightly, C. B. S. See local newspapers for time*

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Bausch & Lomb Marine Binoculars

THE Bausch & Lomb Optical Co., of Rochester, N. Y., are introducing at the Show a new line of prism binoculars. Two entirely new sizes are being offered to the yachtsman — a 7-power glass with a 35 mm. field, and a 9-power glass with a 35 mm. field.

Exhaustive government tests have proved that 7-power makes the best all around glass and Bausch & Lomb have for years been manufacturing a glass of this power, but with a 50 mm., or larger field than the new model. However, with the same power and smaller field they are able to produce a glass which can be bought for less than the price of foreign-made binoculars of the same power and field. For those who want higher power, they have brought out the new 9-power binocular which undersells similar foreign-made glasses of the same quality.

In addition to the new models, Bausch & Lomb have their regular line on exhibit, together with a sectioned binocular and its parts for the purpose of illustration and instruction.

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Rajah Spark Plugs

SPARK plugs of every description are attractively and instructively displayed by the Rajah Company, of Bloomfield, N. J., well-known makers of ignition equipment.

In addition to their regular line of plugs, terminals, bakelite hoods, and rubber safety nipples, Rajah is introducing to the marine field new and improved plugs and hoods made from impact moulding material.

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Hyde Propellers and Electric Windlasses

FROM Bath, Maine, comes an interesting exhibit of propellers, stuffing boxes, stern bearings and other power boat fittings, made by the Hyde Windlass Company. In addition to this necessary part of a boat's equipment, the same company shows a complete line of yacht windlasses, including an electric half windlass. The Hyde half windlass, as its name implies, can be operated either way, and it can be furnished for either 32 or 110 volt, D.C.

There are two outstanding features of this power windlass — its accessibility and the extreme convenience with which it can be changed from electric to hand operation. The motor is not enclosed in a housing, and in case of the necessity of repairs or adjustment it can be removed easily from the windlass proper, leaving the latter so that it can be operated by hand until repairs are completed. No part of the windlass needs to be removed, it being necessary only to place the windlass bar in position and apply arm power. This windlass is made with either one or two heads, and the larger sizes have two wildcats. The whole is rugged, and able to withstand any strain put upon it.

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In 6-power, 30 mm. objective, $70.00 up. 8-power, $80.00 up. Available shortly at your dealer's. Meanwhile explanatory literature mailed on request. Before you buy any binocular, at any price, SEE the New Bausch & Lomb 1934 Models on exhibition at the Motor Boat Show.

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